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TRANSACTIONS

OF THE

PATHOLOGICAL SOCIETY OF LONDON.

VOLUME NINETEENTH.

COMPRISING THE REPORT OF THE PROCEEDINGS FOR THE SESSION 1867-68.

LONDON:

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The present publication, being the Nineteenth Volume of Transactions, constitutes the Twenty-second published Annual Report of the Pathological Society's Proceedings.

The Council think it right to repeat, that the exhibitors are alone responsible for the descriptions given of the Specimens exhibited by them, the only change made in the Reports furnished by the authors being such verbal alterations as were absolutely necessary.

53, Berners Street, Oxford Street,
October, 1868.

7646

ERRATUM IN VOL. XVIII.

Page 145, line 10; *for* "pounds avoirdupois," *read* "ounces avoirdupois."

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1863	PRESCOTT G. HEWETT, Esq.
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OF THE

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CRUVEILHIER, J. C., M.D., late Professor in the Faculty of Medicine, Paris.

HENLE, J., Professor of Anatomy and Physiology in the University of Zurich.

ROKITANSKY, CARL, M.D., Professor of Pathological Anatomy in the University of Vienna.

STOKES, WILLIAM, M.D., D.C.L., LL.D., F.R.S., M.R.I.A., Regius Professor of Physic in the University of Dublin, Physician in ordinary to the Queen in Ireland.

VOGEL, JULIUS, M.D., Professor of Clinical Medicine in the University of Giessen.

Resident and Non-Resident Members.

(C.) Present Members of Council

† Have paid Composition Fee for Annual Subscriptions.

* Former Members of Council.

‡ Have paid Composition Fee for Transactions.

GENERAL LIST OF MEMBERS.

Elected Session.

1858-59 Acland, Henry Wentworth, M.D., F.R.S., Physician to the Radcliffe Infirmary, Oxford.

‡1865-66 Adams, Arthur Bayley, Esq., St. Bees.

* *Orig. Memb.* Adams, William, Esq., (V.P.), Surgeon to the Royal Orthopædic Hospital, 5, Henrietta-street, Cavendish-square.

1858-59 Adams, William, Esq., 37, Harrington-square.

*1847-48 Aikin, Charles A., Esq. 7, Clifton-place, Sussex-square, Hyde-park.

1857-58 Alison, S. Scott, M.D., Physician to the Hospital for Consumption, Brompton, 85, Park-street, Grosvenor-square.

1863-64 Allingham, William, Esq., Surgeon to the Farringdon Dispensary, 36, Finsbury-square.

1867-68 Anderson, J. Ford, M.D., 28 Buckland-crescent, Belsize-park.

1859-60 Andrew, Edwin, M.D., Windsor-house, Castle-street, Shrewsbury.

1862-63 Andrew, James, M.D. (C.), Assistant-Physician to St. Bartholomew's Hospital, 59, Russell-square.

1857-58 Anstie, Francis E., M.D., Assistant-Physician to the Westminster Hospital, 16, Wimpole-street.

Elected Session

1866-67 Arnott, Henry, Esq., Surgical Registrar, Middlesex Hospital, 6, Nottingham-place.

1851-52 Ashton, T. J., Esq., Consulting-Surgeon to the St. Marylebone Infirmary, 31, Cavendish-square.

1857-58 Avent, Nicholas, Esq.

1863-64 Bagshawe, Frederick, Esq., M.A., M.B. Cant., 16, Warrior-square, Hastings.

1864-65 Baker, William Morrant, Esq., Warden of the College, St. Bartholomew's Hospital.

‡1856-57 Balding, Daniel Barley, Esq., Royston, Herts.

*1849-50 Ballard, Thomas, M.D., 10, Southwick-place, Hyde-park.

1864-65 Bankart, James, Esq., M.B., Demonstrator of Anatomy, Guy's Hospital, Surgeon to the Metropolitan Free Hospital, 8, Finsbury-square.

*1851-52 Barclay, A. Whyte, M.D., Physician to St. George's Hospital, 23A, Bruton-street, Berkeley-square.

1860-61 Barker, Edgar, Esq., Jun., 6, Upper Hyde-park-street.

*1855-56 Barker, T. A., M.D. (late V.P.), Consulting Physician to St. Thomas's Hospital, 27, Wimpole-street.

1852-53 Bartlett, William, Esq., Surgeon to the Kensington Dispensary, Ladbroke Lodge, Ladbroke-square, Notting-hill.

1862-63 Barratt, Joseph Gillman, M.D., Accoucheur to the St. George's and St. James's Dispensary, 8, Cleveland-gardens, Bayswater.

*1852-53 Barwell, Richard, Esq., Surgeon to the Charing Cross Hospital,32, George-street, Hanover-square.

1866-67 Basan, Horace, Esq., L.R.C.P. Ed., House-Surgeon to the St. Marylebone Dispensary, 77, Welbeck-street.

1857-58 Basham, William R., M.D., Senior Physician to the Westminster Hospital, 17, Chester-street, Belgrave-square.

1861-62 Bastian, H. Charlton, Esq., M.A., M.D., F.R.S., Professor of Pathological Anatomy in University College, and Assistant-Physician to University College Hospital, 20, Queen Anne-street.

*1851-52 Beale, Lionel S., M.B., F.R.S., Physician to King's College Hospital, 61, Grosvenor-street.

1855-56 Bealey, Adam, M.D., M.A., Birch-lea, Harrogate.

1852-53 Beck, Thomas Snow, M.D., F.R.S., 71, Portland-place.

1865-66 Beeby, Walter, M.D., Bromley, Kent.

1864-65 Beigel, Hermann, M.D., Physician to the St. Pancras Dispensary, 3, Finsbury-square.

1862-63 Bell, James B., Esq., 30, Margaret-street, Cavendish-square.

1864-65 Bellamy, Edward, Esq., Surgeon to the St. George's and St. James's Dispensary, Demonstrator of Anatomy at Charing Cross Hospital, 22, Margaret-street, Cavendish-square.

1846-47 Bennet, James Henry, M.D., Weybridge, Surrey.

Orig. Memb. Bennett, James Risdon, M.D. (formerly V.P.), Physician to St. Thomas's Hospital, and to the City of London Hospital for Diseases of the Chest, 15, Finsbury-square.

Elected Session

‡1856-57 Bickersteth, Edward R., Esq., Surgeon to the Liverpool Royal Infirmary, 2, Rodney-street, Liverpool.

1855-56 Bird, W., Esq., Surgeon to the West London Hospital, Bute House, Hammersmith.

*1849-50 Birkett, Edmund Lloyd, M.D., Physician to the City of London Hospital for Diseases of the Chest, 48, Russell-square.

**Orig. Memb.* Birkett, John, Esq. (late V.P.), Surgeon to Guy's Hospital, 59, Green-street, Grosvenor-square.

1865-66 Bisshopp, James, Esq., Cheshunt, Herts.

1853-54 Black, Cornelius, M.D., Physician to the Chesterfield Dispensary, St. Mary's-gate, Chesterfield.

1849-50 Blagden, Robert, Esq., Stroud, Gloucestershire.

1863-64 Blanchet, Jean B., M.D., M.S., Montreal, Quebec, Canada.

1863-64 Bowen, Francis, M.D., 62, Upper Berkeley-street, Portman-square.

1861-62 Bower, Richard Norris, Esq., 14, Doughty-street, Mecklenburg-square.

*1850-51 Bowman, William, Esq., F.R.S., Surgeon to the Royal Ophthalmic Hospital, 5, Clifford-street.

1862-63 Braine, Francis Woodhouse, Esq., 56, Maddox-street, Hanover-square.

1867-68 Bridgewater Thomas, Esq., M.B. Lond., Harrow-on-the-hill, Middlesex.

1867-68 Bright, G.C., M.B., Oxon., 8, Southwick-crescent, Hyde-park.

1856-57 Briscoe, John, Esq., 12, Broad-street, Oxford.

*†1850-51 Bristowe, John S., M.D. (V.P.) (late Hon. Secretary), Physician to St. Thomas's Hospital, 11, Old Burlington Street.

1859-60 Broadbent, William Henry, M.D. Lond., Assistant-Physician to St. Mary's Hospital, and to the London Fever Hospital, 44, Seymour-street, Portman-square.

*1851-52 Brodhurst, Bernard E., Esq., Assistant-Surgeon to St. George's Hospital, and to the Royal Orthopædic Hospital, 20, Grosvenor-street.

1863-64 Brodie, George Bernard, M.D., 56, Curzon-street, May-fair.

*1846-47 Brooke, Charles, M.B., F.R.S. (late V.P.), Surgeon to the Westminster Hospital, 16, Fitzroy-square.

1864-65 Brown, Augustus, M.D., 30, Belitha-villas, Barnsbury-park.

1866-67 Browne, I. Lennox, Esq., 33, Marylebone-road.

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†1865-66 Bruce, Alexander, Esq., Assistant Surgeon to the Westminster Hospital, 8, Old Cavendish-street, Cavendish-square.

*1855-56 Bryant, Thomas, Esq., Assistant-Surgeon to Guy's Hospital, 2, Finsbury square.

*1854-55 Buchanan, George, M.D., Physician to the London Fever Hospital, and Assistant-Physician to the Hospital for Sick Children, 53, Harley-street, Cavendish-square.

1861-62 Buchanan, Albert, M.B. Lond., 382, Camden-road.

*1858-59 Budd, George, M.D., F.R.S.

1850-51 Bullock, Henry, Esq., (C.) 61, Cumberland-street, Bryanston-square.

1859-60 Burton, Alfred, Esq., 13, Dover-street, Piccadilly.

1852-53 Burton, John M., Esq., Lee-park-lodge, Lee, Kent.

Elected Session

Orig. Memb. Busk, George, Esq., F.R.S. (late V.P.), Consulting Surgeon to the Seamen's Hospital-ship, "Dreadnought," 32, Harley-street, Cavendish-square.

1865-66 Butt, William Frederick, Esq., 17, South-street, Park-lane.

1856-57 Buzzard, Thomas, M.D., Assistant Physician to the National Hospital for the Epileptic and Paralysed, 12, Green-street, Park-lane.

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‡1862-63 Campbell, Charles, M.D., Kingston, Jamaica. [Agent: Mr. H. K. Lewis, 136, Gower street.]

*†*Orig. Memb.* Camps, William, M.D., 84, Park-street, Grosvenor-square.

†1849-50 Canton, Edwin, Esq., Surgeon to the Charing Cross Hospital, 30, Montague-place, Russell-square.

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1855-56 Carter, H. V., M.D., Professor of Anatomy and Physiology, Grant Medical College, Bombay.

†1867-68 Cavafy, John, Esq., M.B., 5, Whitehall.

1863-64 Cay, Charles Vidler, Esq., Coldstream Guards' Hospital, Vincent-square, Westminster.

1863-64 Cayley, William, M.D., Lecturer on Pathological Anatomy and Histology at the Middlesex Hospital, 58, Welbeck-street, Cavendish-square.

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1866-67 Chater, Sydney, Esq., 18, St. Helen's-place, Bishopsgate-street.

**Orig. Memb.* Chevers, Norman, M.D., India.

‡1858-59 Child, Gilbert W., M.D., Physician to the Radcliffe Infirmary, 61, St. Giles', Oxford.

1851-52 Childs, George Borlase, Esq., Surgeon to the City Police Force, 11, Finsbury-place, South.

1854-55 Cholmeley, William, M.D., Physician to the Great Northern Hospital, 40, Russell-square.

1865-66 Church, William Selby, M.D., Assistant Physician to St. Bartholomew's Hospital, Granville-Chambers, Granville-street, Portman-square.

1867-68 Churchill, F. Esq., M.B., 11, New Burlington-Street.

1860-61 Clapton, Edward, M.D., 4, St. Thomas's-street, Southwark.

*1853-54 Clark, Andrew, M.D., Physician to the London Hospital, 23, Montague-place, Russell-square.

1864-65 Clarke, Jacob Lockhart, Esq., F.R.S. (C.), 60, Warwick-street, Pimlico.

*1849-50 Clarke, John, Esq., L.R.C.P., Obstetric Physician to St. George's Hospital, and Physician-Accoucheur to the General Lying-in-Hospital, 42, Hertford-street, May-fair.

1866-67 Clarke, William Fairlie, Esq., M.B. Oxon, 1, Curzon-street, May-fair.

‡1865-66 Coates, Charles, M.D., Physician to the Bath United General Hospital, 10, Circus, Bath.

**Orig. Memb.* Cock, Edward, Esq., (late V.P.), Surgeon to Guy's Hospital, Dean-street South, Tooley-street.

Elected Session

1857-58 Cockerton, Richard, Esq., Surgeon to the Kensington Dispensary, Cornwall-gardens.

1855-56 Cockle, John, M.D., M.A., Physician to the Royal Free Hospital, 63A, Brook-street, Hanover-square.

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1866-67 Coles, George Charles, Esq., Surgeon to the Infirmary for Epilepsy and Paralysis, and to the Islington Dispensary, 2, Codrington-terrace, Kensington-park, and 20, Great Coram-street, Russell-square.

1867-68 Connor, James Henthorne Todd, Esq., St. John's Hill, Battersea Rise.

1858-59 Cooke, Robert Thomas, Esq., Surgeon to the Scarborough Dispensary, 15, St. Nicholas Cliff, Scarborough, Yorkshire.

1866-67 Cooke, T. C. Weeden, Esq., Surgeon to the Royal Free Hospital, and to the Cancer Hospital, 76, Upper Berkeley-street. W.

1866-67 Coombs, Rowland Hill, Esq., Mill-street, Bedford.

*1850-51 Cooper, William White, Esq., Consulting Ophthalmic Surgeon to St. Mary's Hospital, 19, Berkeley-square.

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1853-54 Cornish, William Robert, Esq., Madras.

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†1861-62 Couper, John, Esq., Assistant-Surgeon to the London Hospital, 28, Park-street, Grosvenor-square.

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*1848-49 Critchett, George, Esq. (late V.P.) (formerly Hon. Sec.), Surgeon to the Royal London Ophthalmic Hospital, Moorfields, 21, Harley-street.

1855-56 Croft, John, Esq., Assistant-Surgeon to St. Thomas's Hospital; St. Thomas's Hospital.

‡1865-66 Cromarty, James Pattison, Esq., Civil Surgeon, Tavoy, Burmah. [Agents: Messrs. Fergusson and Co., 77, Clive-street, Calcutta, per United Service Co., 9, Waterloo-place, Pall-mall.]

1860-61 Crosby, Thomas Boor, Esq., 23, Finsbury-place.

1853-54 Cross, Robert, M.D., Physician to the Brewer's-court Dispensary, 20, New-street, Spring-gardens.

1864-65 Crucknell, Henry, Esq., M.B., Physician to the Royal Infirmary for Diseases of the Chest, City-road, 58, Welbeck-street, Cavendish-square.

1857-58 Cumberbatch, Laurence T., M.D., 25, Cadogan-place, Sloane-street.

1854-55 Curgenven, J. Brendon, Esq., 11, Craven-hill-gardens, Bayswater.

*1854-55 Curling, Thomas Blizard, Esq., F.R.S. (V.P.), Surgeon to the London Hospital, 39, Grosvenor-street.

‡1865-66 Curran, William, M.D., Assistant-Surgeon 88th Regiment (Connaught Rangers), Ramel Pindie, India. [Agent: Mr. H. K. Lewis, 136, Gower-street.]

1863-64 Dane, Thomas, Esq., 24, New Finchley-road.

Elected Session

Orig. Memb. Davies, Herbert, M.D., Consulting Physician to the Infirmary for Asthma, &c., and Physician to the London Hospital, 23, Finsbury square.

*1846-47 Davis, John Hall, M.D., Physician Accoucheur to the Middlesex Hospital, and to the Royal Maternity Charity, 24, Harley-street, Cavendish-square.

‡1859-60 Davis, Francis William, Esq., R.N., 11 and 12, Love-lane, Aldermanbury.

1867-68 Davy, Richard, M.D., Surgeon to the St. Marylebone General Dispensary, 33, Welbeck-street, Cavendish-square.

Orig. Memb. Day, George E., M.D., F.R.S., Emeritus Professor of Medicine in the University of St. Andrew's, Furzewell House, Torquay.

1866-67 Day, William Henry, M.D., Physician to the Margaret-street Infirmary for Consumption, 10, Manchester-square.

1865-66 De Morgan, Campbell, Esq., F.R.S. (C.), Surgeon to the Middlesex Hospital, 29, Seymour-street, Portman-square.

1862-63 Devereux, Daniel, Esq., Tewkesbury.

1861-62 Diamond, W. H., L.R.C.P. Edinb., Resident-Physician of the Lunatic Asylum, Brixton.

1855-56 Dick, H., M.D., 59, Wimpole-street, Cavendish-square.

1858-59 Dickinson, W. H., M.D. (C), Assistant-Physician to St. George's Hospital, and Assistant-Physician to the Hospital for Sick Children, 11, Chesterfield-street, May-fair.

1867-68 Dickson, John Thompson, Esq., M.B., B.A. Cantab, 11, Kings-bench-walk, Temple.

Orig. Memb. Dixon, James, Esq. (late V.P.), Surgeon to the Royal Ophthalmic Hospital, Moorfields, 2, Portman-square.

‡‡1865-66 Down, John Langdon H., M.D. Lond., Physician to the London Hospital, 39, Welbeck-street, Cavendish-square.

1865-66 Drewry, George Overend, M.D., Walsall, Stafford.

1864-65 Duckworth, Dyce, M.D., Medical Tutor to St. Bartholomew's Hospital, Physician to the Royal General Dispensary, 70, Wimpole-street.

1863-64 Dudfield, Thomas Orme, M.D., 8, Upper Phillimore-place, Kensington.

1846-47 Dudgeon, Robert E., M.D., 53, Montagu-square.

1851-52 Duff, George, M.D., High-street, Elgin.

1865-66 Duffin, Alfred Baynard, M.D., Assistant-Physician to King's College Hospital, 18, Devonshire-street, Portland-place.

1867-68 Duke, Olliver Thomas, Esq., M.B., 272, Kennington-park-road.

1860-61 Dunn, Robert William, Esq., 13, Surrey-street, Strand.

1864-65 Du Pasquier, Claudius Francis, Esq., Surgeon-Apothecary to the Queen, 62, Pall-mall.

1858-59 Durham, Arthur Edward, Esq., Assistant-Surgeon to Guy's Hospital, 82, Brook-street, Grosvenor-square.

1866-67 Eastes, George, Esq., M.B., 43, Trinity-square, Southwark.

1848-49 Eden, Thomas E., Esq., Surgeon-Dentist to the Farringdon General Dispensary, Cranfield Villa, Norwood, Surrey.

Elected Session

1867-68 Edis, Arthur W., M.B., Physician Accoucheur to the St. James's and St. George's Dispensary, 23, Sackville-street, Piccadilly.

1854-55 Edwards, George N., M.D., Physician to St. Bartholomew's Hospital, 20, Finsbury-square.

1867-68 Elkington, Arthur Guy, Esq., Surgeon, 1st Battalion, Grenadier Guards, 83A, Eccleston-square.

1867-68 Ellis, James, M.D., Medical Superintendent, St. Luke's Hospital for Lunatics, Old-street.

1846-47 Ellis, Joseph, Esq., Sudbrook-park, Richmond, Surrey.

*1846-47 Erichsen, John, Esq. (late V.P.), Surgeon to University College Hospital, 6, Cavendish-place, Cavendish-square.

1853-54 Evans, Conway, M.D. (C), The Hyde, Middlesex.

‡1858-59 Ewens, John, Esq., Milton-Abbas, Blandford, Dorset.

1864-65 Fagge, Charles Hilton, M.D., Assistant-Physician to Guy's Hospital, 12, Union-street, Southwark.

1861-62 Farquharson, Robert, M.D., Medical Officer to Rugby School.

1863-64 Fenwick, Samuel, M.D., Assistant-Physician to the London Hospital, 29, Harley-street.

*1847-48 Fergusson, Sir William, Bart., F.R.S. (late President), Surgeon to King's College Hospital, 16, George-street, Hanover-square.

*1846-47 Fincham, George T., M.D., Physician to the Westminster Hospital, 13, Belgrave-road.

1853-54 Fisher, W. Webster, M.D., Downing Professor of Medicine, Cambridge.

1859-60 Fisher, Alexander, M.D., Assistant-Surgeon, R.N., Her Majesty's Ship "Dragon," Chatham.

*1855-56 Flower, William H., Esq., F.R.S., Conservator of the Museum, Royal College of Surgeons, Lincoln's-inn-fields.

*1851-52 Forbes, J. Gregory, Esq., Surgeon to the Metropolitan Convalescent Institution, 82, Oxford-terrace, Hyde-park.

1849-50 Foreman, Robert Clifton, M.D., Resident Physician to the Asylum for Imbecile Children of the Upper Classes, Church-hill House, Brighton.

*†*Orig. Memb.* Forster, John Cooper, Esq., Assistant Surgeon to Guy's Hospital, Surgeon to the Royal Infirmary for Children, 10, St. Thomas's-street, Southwark.

‡1865-66 Foster, Balthazar Walter, M.D., Physician to the Queen's Hospital, Birmingham, Grosvenor House, Edgbaston, Birmingham.

1866-67 Foster, John B., Esq., 13, Upper Wimpole-street.

1859-60 Foster, Michael, Jun., M.D., Teacher of Practical Physiology and Histology at University College.

1862-63 Fox, Wilson, M.D., (C.), Professor of Clinical Medicine in University College, and Assistant-Physician to University College Hospital, 22B, Cavendish-square.

1865-66 Fox, W. Tilbury, M.D., 43, Sackville-street.

1858-59 Francis, Charles Richard, M.B., Bengal Medical Establishment, Indian Army.

Elected Session

1853-54 Freeman, William Henry, Esq., 21, Spring-gardens.

Orig. Memb. Freere, J. C., Esq., Trinity College, Cambridge.

1863-64 Frodsham, John Mill, M.D.

*1846-47 Fuller, Henry W., M.D., Physician to St. George's Hospital, 13, Manchester-square.

1867-68 Fyffe, Andrew, M.D., 112, Brompton-road.

‡1858-59 Gairdner, William Tennant, M.D., Professor of Medicine in the University of Glasgow, 21, Blythswood-square, Glasgow.

1855-56 Gamgee, Joseph Sampson, Esq., Surgeon to the Queen's Hospital, Birmingham, 20, Broad-street, Birmingham.

1855-56 Gamgee, J. Esq., Albert Veterinary College, Queen's-road, Bayswater.

*1846-47 Garrod, Alfred Baring, M.D., F.R.S. (late V.P.), Physician to King's College Hospital, 11, Harley-street, Cavendish-square.

1858-59 Gascoyen, George Green, Esq., Surgeon to the Lock Hospital, and Assistant-Surgeon to, and Lecturer on Anatomy at, St. Mary's Hospital, 48, Queen-Anne-street, Cavendish Square.

1855-56 Gaskoin, George, Esq., 7, Westbourne-park, Paddington.

**Orig. Memb.* Gay, John, Esq., Senior Surgeon to the Great Northern Hospital, King's-cross, 10, Finsbury-place South.

*1854-55 Gibb, Sir George Duncan, Bart., M.D., L.L.D., Assistant-Physician to the Westminster Hospital, 1, Bryanston-street, Portman-square.

1853-54 Gibbon, Septimus, M.D., 11, Finsbury-place, South.

‡1857-58 Godfrey, Benjamin, M.D., Carlton-house, Enfield.

*1854-55 Goodfellow, Stephen Jennings, M.D., Physician to the Middlesex Hospital, 5, Savile-row, Burlington-gardens.

1857-58 Gowland, Peter Y., Esq., Surgeon to St. Mark's Hospital, 34, Finsbury-square.

1846-47 Gream, George T., M.D. (C.), 2, Upper Brook-street, Grosvenor-square.

1866-67 Green, Thomas H., M.D., Lecturer on Pathology at Charing Cross Hospital, 74, Wimpole-street.

1856-57 Greenhalgh, Robert, M.D., Physician-Accoucheur to St. Bartholomew's Hospital, 77, Grosvenor-street.

‡1854-55 Greenhill, William Alexander, M.D., Carlisle-parade, Hastings.

1863-64 Greenhow, Edward Headlam, M.D. (C), Assistant-Physician to the Middlesex Hospital, 77, Upper Berkeley-street, Portman-square.

1860-61 Gueneau de Mussy, Henri, M.D., 4, Cavendish-place, Regent-street.

1863-64 Gull, William Withey, M.D., 74, Brook-street, Grosvenor-square.

1858-59 Gunn, Theophilus Miller, Esq., 40, York-place, Portman-square.

1851-52 Hacon, E. Dennis, Esq., Mare-street, Hackney.

†1851-52 Halley, Alexander, M.D., 16, Harley-street, Cavendish-square.

1851-52 Hansard, Richard James, Esq.

*1847-48 Hare, Charles John, M.D., 57, Brook-street, Grosvenor-square.

*†1855-56 Harley, George, M.D., F.R.S., Physician to University College Hospital, 25, Harley-street.

Elected Session

1862-63 Harling, Robert Dawson, M.D. Lond., 16, Seymour-street, Portman-square.

†1857-58 Hart, Ernest, Esq. (C.), Ophthalmic Surgeon to St. Mary's Hospital, 69, Wimpole-street.

†1859-60 Hastings, Cecil William, M.B., 13, Queen Anne-street, Cavendish-square.

**Orig. Memb.* Hawkins, Cæsar H., Esq., F.R.S. (formerly President), Consulting-Surgeon to St. George's Hospital, 26, Grosvenor-street.

1856-57 Hawksley, Thomas, M.D., Physician to the Margaret-street Dispensary for Consumption, 6, Brook-street, Hanover-square.

*1856-57 Heath, Christopher, Esq., Assistant-Surgeon to University College Hospital, 9, Cavendish place, Cavendish-square.

1866-67 Heckford, Nathaniel, Esq., East London Children's Hospital.

1867-68 Heslop, Thomas P., M.D., Physician to the Children's Hospital, Birmingham.

**Orig. Memb.* Hewett, Prescott G., Esq. (V.P. late President), Surgeon to St. George's Hospital, 1, Chesterfield-street, May-fair.

*1854-55 Hewitt, Graily, M.D., Obstetric Physician to University College Hospital, 36, Berkeley-square.

1863-64 Hickman, William, M.B., Surgeon to the Samaritan Hospital, and to the Western General Dispensary, 1, Dorset-square.

1863-64 Hicks, J. Wale, M.D., Lecturer on Morbid Anatomy at St. Thomas's Hospital, 16, Dartmouth-park-road, Highgate-road.

1859-60 Hill, Matthew Berkeley, M.B. Lond., Assistant-Surgeon to University College Hospital, and Surgeon to the Lock Hospital, 14, Weymouth-street, Portland-place.

1866-67 Hill, Samuel, M.D., 22, Mecklenburgh-square.

1854-55 Hillier, Thomas, M.D. (C.), Physician to the Skin-Department of University College Hospital, Physician to the Hospital for Sick Children, 32, Queen Anne-street, Cavendish-square.

**Orig. Memb.* Hillman, William Augustus, Esq., Senior Assistant-Surgeon to the Westminster Hospital, 1, Argyll-street, Regent-street.

*†*Orig. Memb.* Hilton, John, Esq., F.R.S., (late V.P.), Surgeon to Guy's Hospital, 10, New Broad-street, City.

1855-56 Hinton, J., Esq., Aural Surgeon to Guy's Hospital, 18, Savile-row.

*1850-51 Hodgson, Joseph, Esq., F.R.S., 60, Westbourne-terrace.

*1852-53 Hogg, Jabez, Esq., Assistant-Surgeon to the Westminster Ophthalmic Hospital, 1, Bedford-square.

1846-47 Holman, H. Martin, M.D., Hurstpierpoint, Sussex.

*1854-55 Holmes, Timothy, Esq., (C. late Secretary), Surgeon-in-Chief to the Metropolitan Police, Surgeon to St. George's Hospital, and Surgeon to the Hospital for Sick Children, 31, Clarges-street, Piccadilly.

*1849-50 Holt, Barnard Wight, Esq., Senior Surgeon to the Westminster Hospital, 14, Savile-row.

**Orig. Memb.* Holthouse, Carsten, Esq., Surgeon to, and Lecturer on Surgery at, the Westminster Hospital, 2, Storey's-gate, St. James's-park.

1863-64 Hood, Wharton P., M.D., 65, Upper Berkeley-street, Portman-square.

1853-54 Hood, Sir William Charles, M.D., Visiting-Physician in Lunacy to the Court of Chancery, Croydon Lodge, Surrey.

Elected Session.

1864-65 Hooper, John Hayward, Esq., M.B., Tenby, South Wales.

1850-51 Hore, Henry A., Esq., Surgeon to the Bristol Royal Infirmary, 31, Park-street, Bristol.

1865-66 Howard, Edward, M.D., Redhill, Surrey.

†1855-56 Hudson, John, M.D., 11, Cork-street.

*1854-55 Hulke, John Whitaker, Esq., F.R.S., (Hon. Secretary), Assistant-Surgeon to the Middlesex Hospital, and to the Royal London Ophthalmic Hospital, 10, Old Burlington-street.

1854-55 Hulme, Edward Charles, Esq., Surgeon to the Great Northern Hospital, and to the Central London Ophthalmic Hospital, 38, Gower-street, Bedford-square.

1852-53 Humby, Edwin, Esq., 83, Hamilton-terrace, St. John's-wood.

1865-66 Hunter, Charles, Esq. 30, Wilton-place, Belgrave-square.

*1852-53 Hutchinson, Jonathan, Esq., Surgeon to the London Hospital, and Assistant-Surgeon to the Royal London Ophthalmic Hospital, Moorfields, 4, Finsbury-circus.

†1860-61 Ingram, Charles, M.D.

1865-66 Jackson, J. Hughlings, M.D., Assistant-Physician to the London Hospital, Physician to the National Hospital for the Paralysed and Epileptic, 28, Bedford-place, Russell-square.

1859-60 Jackson, Thomas Carr, Esq., Surgeon to the Great Northern Hospital, 3, Weymouth-street, Portland-place.

‡1853-54 Jardine, John Lee, Esq., Capel, near Dorking, Surrey.

1846-47 Jay, Edward, Esq., 112, Park-street, Grosvenor-square.

1867-68 Jeffree, John, Esq., Howard Lodge, Atkins'-road, Clapham-park.

**Orig. Memb.* Jenner, Sir William, Bart., M.D., F.R.S. (late V.P.), Physician to University College Hospital, 63, Brook-street.

1861-62 Jephson, John Holmes, M.D., Physician to the Great Northern Hospital, 7, Gloucester-terrace, Hyde-Park.

1865-66 Jessop, Thomas Richard, Esq., 31, Park-square, Leeds.

1854-55 Johnson, Athol A. W., Esq., 20, Regency-square, Brighton.

1854-55 Johnson, Edward, M.D., 19, Cavendish-place, Cavendish-square.

**Orig. Memb.* Johnson, George, M.D. (late V.P.), Physician to King's College Hospital, 11, Savile-row.

*†*Orig. Memb.* Jones, Henry Bence, M.D., F.R.S. (formerly V.P.), 84, Brook-street, Grosvenor-square.

*1853-54 Jones, Sydney, M.B., Assistant-Surgeon to St. Thomas's Hospital, 15, St. Thomas's-street, Southwark.

1861-62 Jones, Thomas, Esq., St. George's Hospital.

1858-59 Jones, William Price, M.D., Surbiton, Kingston.

1859-60 Jones, Walter, Esq., College-yard, Worcester.

1866-67 Kelly, Charles, M.D., Curator of the Museum at King's College, and Pathological Registrar to the Hospital, King's College.

1866-67 Kempthorne, Henry Law, Esq., M.B., Bethlem Hospital.

Elected Session

1846-47 Kent, Thomas J., Esq., 60, St. James's-street.

1852-53 Kershaw, W. Wayland, M.D., Kingston-on-Thames.

1859-60 Kiallmark, Henry Walter, Esq., 66, Prince's-square, Bayswater.

1867-68 King, Edwin Holborow, Esq., 18, Stratford-place, Oxford-street.

1851-52 Kingdon, J. Abernethy, Esq., Surgeon to the City Dispensary, and to the City of London Truss Society, 2, New Bank-buildings.

‡1856-57 Kingsley, Henry, M.D., Physician to the Stratford Infirmary, Stratford-on-Avon, Warwickshire.

1854-55 Kirby, Edmund A., M.D., 26, Gordon-square.

‡1865-66 Lanchester, Henry Thomas, M.D., 53, High-street, Croydon.

*1850-51 Langmore, John C., M.B., 12, Sussex-gardens, Hyde-park.

1865-66 Langton, John, Esq., Assistant-Surgeon to St. Bartholomew's Hospital, The College, St. Bartholomew's.

*1849-50 Latham, Peter Mere, M.D. (formerly President), late Physician to St. Bartholomew's Hospital.

1856-57 Laurence, John Z., Esq., Surgeon to the St. Marylebone General Dispensary, 30, Devonshire-street, Portland-place.

1867-68 Lawrence, Henry Cripps, Esq., Registrar, Queen Charlotte's Lying-in Hospital, Marylebone-road.

1853-54 Lawrence, Henry John Hughes, Esq., Assistant-Surgeon, Grenadier Guards; Hospital, Rochester-row, Westminster.

1858-59 Lawson, George, Esq., Assistant-Surgeon to the Middlesex Hospital, and to the Royal London Ophthalmic Hospital, Moorfields, 12, Harley-street, Cavendish-square.

1864-65 Leach, Harry, Esq., H.M.S. "Dreadnought."

1857-58 Leared, Arthur, M.D., Senior Physician to the Great Northern Hospital, 12, Old Burlington-street.

*1851-52 Lee, Henry, Esq., Surgeon to St. George's Hospital, 9, Savile-row.

1866-67 Lees, Joseph, M.D., Demonstrator of Anatomy at St. Thomas's Hospital, 112, Walworth-road.

*1852-53 Leggatt, Alfred, Esq., 13, William-street, Lowndes-square.

1864-65 Leighton, Edmund Thomas, M.B., 4, Henrietta-street, Cavendish-square.

‡1867-68 Leudet, T., M.D. Par., Professor of Clinical Medicine, Rouen, France.

1867-68 Levy, Julius Lawrence, Esq., 100, Westbourne-terrace, Hyde-park.

1861-62 Lichtenberg, George, M.D., 47, Finsbury-square.

1848-49 Little, William John, M.D. (formerly V.P.), 71, Brook-street, Grosvenor-square.

†1862-63 Little, Louis S., Esq., Assistant-Surgeon to the London Hospital, 71, Brook-street, Grosvenor-square.

1863-64 Liveing, Robert, M.D., Assistant-Physician to the Middlesex Hospital, 17, Granville-place, Portman-square.

‡1860-61 Lund, George, M.D.

1858-59 Mackay, Allan Douglas, M.B., Stony-Stratford, Bucks.

1863-64 Mackenzie, Morell, M.D., Assistant-Physician to the London Hospital, 13, Weymouth-street, Portland-place.

Elected Session

1865-66 MacLaurin, H. N., M.D., H.M. Ship, "Nelson."

1857-58 Marcet, William, M.D., F.R.S., 48, Harley-street, Cavendish-square.

*1851-52 Markham, William O., M.D., Poor Law Inspector for the Metropolitan District, 8, Harley-street, Cavendish-square.

1867-68 Marsh, F. Howard, Esq., Assistant Surgeon to the Hospital for Sick Children, The College, St. Bartholomew's Hospital.

*1846-47 Marshall, John, Esq., F.R.S., Surgeon to University College Hospital, 10, Savile-row.

‡1860-61 Martin, John, Esq., Cambridge House, Portsmouth.

1856-57 Martin, Robert, M.D.

1852-53 Martyn, S., M.D., Senior Physician to the Bristol General Hospital, 26, Park-street, Bristol.

1858-59 Martyn, William, M.D., 6, Trevor-terrace, Rutland-gate, Brompton.

1860-61 Mason, Francis, Esq., Assistant-Surgeon to the Westminster Hospital, 10, Conduit-street, Regent-street.

1866-67 Mason, Philip Brookes, Esq., Burton-on-Trent.

†1858-59 Maunder, C. F., Esq., Assistant-Surgeon to the London Hospital, 29, New Broad-street.

‡1851-52 May, George, Jun., M.B., Surgeon to the Royal Berkshire Hospital, Reading.

1857-58 Meller, Charles James, Esq., Vice-Consul, Madagascar.

1859-60 Messer, John Cockburn, M.D., Assistant-Surgeon, R.N., Her Majesty's ship, "Edinburgh," Queensferry, N.B.

‡1867-68 Mickley, Arthur George, M.B. Lond., House-Surgeon, General Hospital, Nottingham.

1865-66 Mickley, George, M.A., M.B., Cantab., Three Counties Asylum, near Arlesey, Bedfordshire.

†1858-59 Montefiore, Nathaniel, Esq., 36, Hyde-park-gardens.

†1865-66 Moore, Charles Hewitt, Esq., Surgeon to the Middlesex and St. Luke's Hospitals, 102, Piccadilly.

1861-62 Morehead, Charles, M.D., 34, Melville-street, Edinburgh.

*1846-47 Morgan, John, Esq., 3, Sussex-place, Hyde-park-gardens.

1859-60 Moxon, Walter, M.D.,(C.), Assistant-Physician to Guy's Hospital, 6, Finsbury-circus.

*1854-55 Murchison, Charles, M.D., F.R.S. (Hon. Secretary), Physician to, and Lecturer on the Practice of Medicine at, the Middlesex Hospital, and Senior Physician to the London Fever Hospital, 79, Wimpole-street.

1867-68 Murray, John, M.D., 40, Bryanston-street, Portman-square.

Mussy, *see* Gueneau de Mussy.

1864-65 Myers, Arthur B. R., Esq., Coldstream Guards' Hospital, Vincent-square, Westminster.

1864-65 Newman, William, M.D., Stamford, Lincolnshire.

1865-66 Nicoll, Charles R., Resident Medical Officer to the Charter House, 17, Charter House-square.

1863-64 Norton, Arthur T., Esq., Assistant-Surgeon to St. Mary's Hospital, 6, Wimpole-street, Cavendish-square.

1864-65 Noverre, Arthur, Esq., 25, South-street, Park-lane.

Elected Session.

*1856-57 Nunn, Thomas William, Esq., Surgeon to the Middlesex Hospital, 8, Stratford-place, Oxford-street.

‡1858-59 Nunneley, Thomas, Esq., Senior Surgeon to the Leeds Eye and Ear Infirmary, Leeds.

*1850-51 Ogle, John W., M.D. (V.P.) (late Honorary Secretary), Physician to St. George's Hospital, 13, Upper Brook-street, Grosvenor-square.

‡1855-56 Oldfield, Edmund, Esq., Boscomb Lodge, Finchley-road.

1859-60 Orange, William, Esq., Broadmoor, Berkshire.

1857-58 Ord, William Miller, M.B., Lecturer on Comparative Anatomy at St. Thomas's Hospital, Brixton-hill.

1863-64 Orme, E., Esq., 81, Avenue-road, Regent's-park.

1864-65 Owles, James Allden, M.D., 204, Burlington Street, Liverpool.

1863-64 Palfrey, James, M.D., Assistant-Obstetric-Physician to the London Hospital, 25, Finsbury-place.

1853-54 Parkinson, George, Esq., 50, Brook-street, Grosvenor-square.

1853-54 Part, James, M.D., 89, Camden-road, Camden-town.

**Orig. Memb.* Partridge, Richard, Esq., F.R.S. (formerly V.P.), Surgeon to King's College Hospital, 17, New-street, Spring-gardens.

1865-66 Pavy, Frederick William, M.D., F.R.S., Assistant-Physician to Guy's Hospital, 35, Grosvenor-street.

1867-68 Payne, Francis, B.A., M.B. Oxon., Lecturer on Morbid Anatomy at St. Mary's Hospital.

**Orig. Memb.* Peacock, Thomas Bevill, M.D. (V.P., late President), Physician to St. Thomas's Hospital, and Physician to the City of London Hospital for Diseases of the Chest, 20, Finsbury-circus.

1862-63 Pearson, David R., M.D., 23, Upper Phillimore-place, Kensington.

1866-67 Phillips, John Jones, Esq., M.B., 43, Trinity-square, Southwark.

1863-64 Pick, Thomas Pickering, Esq., Demonstrator of Anatomy at St. George's Hospital, 9, Bolton-row, May-fair.

1867-68 Pitt, Edward, G. M.D., 251, Hackney-road.

1863-64 Playfair, W. S., M.D., Assistant-Physician for the Diseases of Women and Children, King's College Hospital, 5, Curzon-street, May-fair.

1860-61 Pocock, William, Esq., 1, St. John's-villas, Brixton-road.

**Orig. Memb.* Poland, Alfred, Esq., Surgeon to Guy's Hospital, 27A, Finsbury-square.

1861-62 Pollock, Arthur Julius, M.D., Assistant-Physician to Charing-Cross Hospital, 21, Montague-place, Russell-square.

1867-68 Pollock, Edward J., Esq., Surgeon to the Farringdon General Dispensary, 6, Old Cavendish-street.

*1846-47 Pollock, George D., Esq. (late V.P. and Hon. Sec.), Surgeon to St. George's Hospital, 36, Grosvenor-street.

*1850-51 Pollock, James Edward, M.D., Physician to the Hospital for Consumption and Diseases of the Chest, Brompton, 52, Upper Brook-street.

1858-59 Potter, Henry, Esq., 56, Maddox-street, Hanover-square.

1854-55 Potts, William, Esq., 12, North Audley-street, Grosvenor-square.

1865-66 Powell, Richard Douglas, M.D., Physician to the St. Marylebone General Dispensary, 6, Nottingham-place, Marylebone-road.

Elected Session.

1865-66 Power, Henry, Esq., M.B., Ophthalmic Surgeon to St. George's Hospital, 45, Seymour-street, Portman-square.

1856-57 Priestley, William Overend, M.D., Physician for the Diseases of Women and Children to King's College Hospital, Consulting Physician-Accoucheur to the St. Marylebone Infirmary, 17, Hertford-street, May-fair.

*†1848-49 Purnell, John James, Esq., Surgeon to the Royal General Dispensary, Woodlands, Streatham-hill.

*1850-51 Pyle, John, Esq., 59, Oxford-terrace, Hyde-park.

**Orig. Memb.* Quain, Richard, M.D. (Treasurer, formerly Hon. Secretary), Physician to the Hospital for Consumption and Diseases of the Chest, Brompton, 67, Harley-street, Cavendish-square.

1859-60 Radcliffe, Charles Bland, M.D., Physician to the Westminster Hospital, 25, Cavendish-square.

1856-57 Ramskill, J. Spence, M.D., Physician to the London Hospital, Physician to the National Hospital for the Paralysed and Epileptic, 5, St. Helen's-place, Bishopsgate-street.

*1847-48 Randall, John, M.D., Medical Officer, St. Marylebone Infirmary, 14, Portman-street, Portman-square.

1856-57 Ranke, Henry, M.D., Munich.

1864-65 Rasch, Adolphus, M.D., 7, South-street, Finsbury-square.

1858-59 Reed, Frederick George, M.D., 46, Hertford-street, May-fair.

1866-67 Reeves, Henry Albert, Esq., 3, Hardwick-place, Harrington-square.

1866-67 Rendle, James Davy, M.D., Park-hill, Clapham-park.

1854-55 Reynolds, J. Russell, M.D., (C.), Physician to University College Hospital, 38, Grosvenor-street.

**Orig. Memb.* Ridge, Joseph, M.D., 39, Dorset-square.

1865-66 Rivington, Walter, Esq., M.S., Lond., Assistant-Surgeon to the London Hospital, 22, Finsbury-square.

1863-64 Roberts, Arthur, Esq., 37, Kensington-square.

‡1865-66 Roberts, David Lloyd, M.D., Surgeon in Ordinary to St. Mary's Hospital, Manchester, 23, St. John's-street, Manchester.

1855-56 Roberts, John Henry, Esq., 10, Finchley-road, St. John's-wood.

1863-64 Robinson, Charles, Esq., F.R.C.P. Edinb., 11, Montagu-street, Portman-square.

1859-60 Robinson, Frederick, M.D., Surgeon Major, Scots Fusileer Guards', 48, Charlwood-street, Belgrave Road.

1856-57 Robinson, Thomas, M.D., 35, Lamb's Conduit-street.

Orig. Memb. Roe, George Hamilton, M.D., Consulting Physician to the Hospital for Consumption and Diseases of the Chest, Brompton, 124, Park-street, Grosvenor-square.

1865-66 Rogers, George Henry, Esq., 14, Old Burlington-street.

1858-59 Rolleston, George, M.D., F.R.S., 5, Broad-street, Oxford.

*1851-52 Rooke, H. T., M.D., Surgeon to the Seamen's Hospital-ship, "Dreadnought."

1858-59 Rose, Henry Cooper, M.D., Surgeon to the Hampstead Dispensary, High-street, Hampstead,

Elected Session.

1858-59 Rouse, James, Esq., Assistant-Surgeon to St. George's Hospital, 2, Wilton-street, Grosvenor-place.

*1852-53 Salter, Henry Hyde, M.D., F.R.S., Physician to the Charing Cross Hospital, 14, Harley-street, Cavendish-square.

*1853-54 Salter, Samuel James A., M.B., F.R.S., Surgeon-Dentist to Guy's Hospital, 17, New Broad-street, City.

1852-53 Sanderson, Hugh James, M.D., Physician to the Hospital for Women 26, Upper Berkeley-street.

*1854-55 Sanderson, John Burdon, M.D., F.R.S., Assistant-Physician to the Middlesex Hospital, and Physician to the Hospital for Consumption, Brompton, 49, Queen Anne-street, Cavendish-square.

‡1866-67 Sankey, W. H. Octavius, M.D., Sandywell-park, near Cheltenham.

1857-58 Schulhof, Maurice, M.D., Physician to the Royal General Dispensary, Bartholomew-close, 46, Brook-street.

1853-54 Scott, John, Esq., Surgeon to the Hospital for Women, Soho-square, 49, Harley-street, Cavendish-square.

‡1858-59 Scratchley, George, M.D., B.L.S., Member of the University of France, New Orleans, Louisiana, U.S. [A. Scratchley, Esq., 7, Waterloo-place.]

*‡1846-47 Seaton, Edward C., M.D., Rochester-house, Surbiton.

1856-57 Sedgwick, William, Esq., Surgeon to the Marylebone Provident Dispensary, 12, Park-place, Upper Baker-street.

*1852-53 Semple, Robert Hunter, M.D., Physician to the Northern Dispensary, 8, Torrington-square.

1867-68 Sewill, Henry E., Esq., Dental Surgeon, West London Hospital, 6, Wimpole-street, Cavendish-square.

**Orig. Memb.* Shaw, Alexander, Esq. (late V.P.), Surgeon to the Middlesex Hospital, 40, Abbey-road West, Kilburn.

1856-57 Shillitoe, Buxton, Esq., Surgeon to the Great Northern Hospital, and to the Lock Hospital, 34, Finsbury-circus.

*1855-56 Sibley, Septimus W., Esq., 12, New Burlington-street.

*1848-49 Sibson, Francis, M.D., F.R.S. (V.P.), Physician to St. Mary's Hospital, 59, Brook-street, Grosvenor-square.

*1847-48 Sieveking, Edward H., M.D. (late V.P.), Physician to St. Mary's Hospital, 17, Manchester-square.

**Orig. Memb.* Simon, John, Esq., F.R.S., D.C.L., (President), Surgeon to St. Thomas's Hospital, 8, Richmond-terrace, Whitehall, and 40, Kensington-square.

1866-67 Sims, Francis Manley Boldero, St. George's Hospital.

1864-65 Sims, J. Marion, M.D., Paris.

**Orig. Memb.* Smith, Ebenezer Pye, Esq., Mare-street, Hackney.

1863-64 Smith, Henry, Esq., Assistant-Surgeon to King's College Hospital, 82, Wimpole-street, Cavendish-square.

1865-66 Smith, Heywood, Esq., M.B. Oxf., Assistant Physician to the Hospital for Women, 42, Park-street, Grosvenor-square.

1865-66 Smith, Philip Henry Pye, M.D., Demonstrator of Anatomy at Guy's Hospital, 8, Bridge-street, Southwark.

Elected Session

1846-47 Smith, Protheroe, M.D., Physician to the Hospital for Women, 42, Park-street, Grosvenor-square.

1855-56 Smith, Spencer, Esq., Surgeon to St. Mary's Hospital, 9, Queen Anne-street, Cavendish-square.

1856-57 Smith, Thomas, Esq. (C.), Assistant-Surgeon to St. Bartholomew's Hospital, 5, Stratford-place, Oxford-street.

1865-66 Smith, William, Esq., 10, Finsbury-place South.

1851-52 Smith, W. Tyler, M.D., Physician-Accoucheur to St. Mary's Hospital, 21, Upper Grosvenor-street.

*1847-48 Solly, Samuel, Esq., F.R.S., Surgeon to St. Thomas's Hospital, 6, Savile-row.

1865-66 Spooner, Charles, Esq., Professor and Principal in the Royal Veterinary College, Great College-street, Camden Town.

1867-68 Spry, George Frederick, M.D., Assistant Surgeon, 2nd Life Guards, Regent's-park Barracks.

1865-66 Squarey, Charles, Esq., Resident Medical Officer, University College Hospital.

1854-55 Squire, William, Esq., 6, Orchard-street, Portman-square.

1860-61 Squire, Alexander Balmanno, Esq., 9, Weymouth-street, Portland-place.

1854-55 Stewart, William Edward, Esq., Surgeon to St. Marylebone Provident Dispensary, 12, Weymouth-street, Portland-place.

1862-63 Stone, William Domett, M.D., 42, Lincoln's-inn-fields.

†1853-54 Streatfeild, J. F., Esq., Assistant-Surgeon to the Royal London Ophthalmic Hospital, Moorfields, and Ophthalmic Surgeon to University College Hospital, 15, Upper Brook-street.

1862-63 Sturges, Octavius, M.B., Cantab., Assistant Physician to the Westminster Hospital, 85, Wimpole-street.

1863-64 Sutton, Henry G., M.B., Assistant-Physician to the London Hospital, 9, Finsbury-square.

‡1866-67 Swain, William Paul, Esq., 20, Ker-street, Devonport.

1858-59 Swete, Benjamin L., Esq., Surgeon to the British Orphan Asylum, Clapham-rise, 7, Park-road, Stockwell.

‡1856-57 Symonds, Frederick, Esq., Surgeon to the Radcliffe Infirmary, 32, Beaumont-street, Oxford.

Orig. Memb. Tamplin, R. W., Esq., Surgeon to the Royal Orthopædic Hospital, 33, Old Burlington-street.

†1867-68 Tanner, Thomas Hawkes, M.D., 9, Henrietta-street, Cavendish-square.

‡1855-56 Tapp, W. Denning, Esq., Hillside-house, Hatherley-road, Cheltenham.

1863-64 Tatham, John, M.D., 1, Wilton-place, Knightsbridge.

1860-61 Treevan, William Frederic, Esq., Surgeon to the West London Hospital, 10, Portman-square.

*1852-53 Thompson Sir Henry, Knt., (V.P. late Honorary Secretary), Surgeon to University College Hospital, 35, Wimpole-street, Cavendish-square.

‡1861-62 Thompson, Joseph, Esq., Surgeon to the Nottingham General Hospital, Oxford-street, Nottingham

Elected Session.

1867-68 Thompson, Reginald Edward, M.D. Cantab., Medical Registrar to St. George's Hospital, Physician to the St.George's and St. James's Dispensary, 21, South-street, Park-lane.

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LIST OF SPECIMENS REPORTED ON BY THE COMMITTEE ON MORBID GROWTHS.

During the Session 1866-7, a Committee was appointed by the Council of the Society, which was designated the "Committee on Morbid Growths and Deposits." The object of this Committee is "to ascertain if any and what relation exists between anatomical structure and those clinical characters ordinarily regarded as 'malignant.'" The specimens submitted to this Committee are such as the President deems proper, and the following regulations must be complied with respecting them :—

"1. The specimen must be either fresh, or in a jar or bottle with some preservative fluid.*

"2. The specimen must be accompanied by a written description or clinical history.

"3. The specimen must be placed at the disposal of the Committee, at the close of the meeting, for examination."

Where the above regulations are not complied with, the specimens are not reported upon by the Committee, and the case can only be published in the *Transactions*, with the express sanction of the Council.

The gentlemen comprising the Committee at present are:—Dr. Andrew, Dr. Bristowe, Mr. Bruce, Dr. Dickinson, Mr. Hulke, F.R.S., Dr. Moxon, Mr. Sibley, and Dr. Burdon Sanderson, F.R.S.

Thirty specimens have already been reported on by this Committee. Three of the Reports were published in Vol. XVIII. The remaining twenty-seven are contained in this volume. A complete list of these Reports is subjoined.

It is intended that the Committee shall ultimately prepare a general report on the matters of their investigation.

* The Committee recommend that when a specimen cannot be perfectly fresh at the time of exhibition, a small portion of it be preserved in an aqueous solution of chromic acid, 3 grains to the ounce, and that thin sections for microscopic purposes be preserved in glycerine.

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REPORT.

SESSION 1867-8.

I.—DISEASES, ETC., OF THE NERVOUS SYSTEM.

1. *Embolism of left middle cerebral artery, and disease of the brain. Recovery from the hemiplegia. Death from disease of the kidneys and dropsy.*

John M., aged 21, was admitted into the Middlesex Hospital, under my care, on the 26th of October, 1866.

At the age of 7 he was laid up for four months in this hospital with rheumatic fever. This complaint never returned, and soon after leaving the hospital he entered the navy, from which he was discharged at the age of 17, on account of palpitations of the heart. After this he was a seaman in the merchant-service for two years, and shortly before leaving this service he fell down into the hold of the ship, injuring his head and becoming unconscious for some hours, but after four days he was able to resume his duty. Since this accident, his hearing had never been so good as it had been before. On leaving the merchant-service he acted for upwards of a year as a bargeman on the Thames, and afterwards for nine months as a carman, carrying daily heavy sacks of coals. A year before admission, he contracted syphilis, followed by a bubo in each groin which did not suppurate, but not by eruptions or pains in the bones. For a year before admission he had suffered much from dyspnœa and palpitations on exertion; he had no cough, but on five or six occasions he had expectorated a good deal of bright blood; his deafness had increased, and he had complained much of noises in the ears, especially in the left ear. Three months before admission he had passed four or five yards of a tape-worm.

On the 24th of October, at 5 P.M., while engaged in carrying coals, he became so giddy that he was obliged to desist from his work, and

he at once discovered that he had in a great measure lost the use of the left side of his body, so that on trying to get home he fell repeatedly in the street. Three hours afterwards, severe pain in the right side of the head came on, and for twenty-four hours his speech was so defective that his friends had difficulty in understanding what he said. On the day following his seizure he had great nausea, but no vomiting. There did not appear to have been any loss of consciousness.

On the day of admission into the hospital, his symptoms were noted in the Case-book as follows: "Complains of pain in the right side of his head, so severe as often to make him cry, and also of distressing noises in the ears, especially the left. Has hemiplegia of the left side; the loss of power in the left arm is almost complete, but he can move the left leg freely in bed, although he cannot stand on it. There is no rigidity of the muscles in the paralysed limbs, and the sensibility is only slightly impaired; he has often pricking sensations in the left hand and foot. When he cries, the right angle of the mouth is distinctly drawn upwards; the tongue when protruded deviates to the left side, but there is now no impediment of the speech. The pupils are of natural size and equal; there is lacrymation, with vascular injection of the conjunctivæ of both eyes. The pulse is 72, small and feeble, but regular. Patient complains much of palpitation of the heart, the apex of which can be felt beating strongly between the fifth and sixth ribs, slightly to the left of the left nipple. The cardiac dulness is increased, measuring three inches transversely in the level of the nipple. Over the third left intercostal space there is a prolonged systolic bellows-murmur propagated upwards along the vessels, and there is also a fainter, but apparently distinct, systolic murmur over the apex. The respiration is slow and easy, and there is no cough; the physical signs of the lungs are normal; the tongue is moist and slightly furred; the bowels had been freely moved by medicine before admission. No tenderness or enlargement of spleen. The urine is acid, and contains no albumen; specific gravity, 1,025. There is no anasarca." The patient was ordered a blister to the nape, a bladder of ice to the forehead, and a draught every six hours, containing five grains of iodide of potassium and a like quantity of carbonate of ammonia.

His progress was as follows: After four days the headache ceased, but the noises in the left ear remained, and about the same time a daily improvement began to be noted in the paralysed limbs—first in the leg and then in the arm. On the 15th of November he was able to walk

and bear his weight on the left foot. He could also use all the muscles of the left arm and hand, and he could hold a pen in his left fingers, but he was still unable to close the fist, or grasp firmly with the left hand. The tongue was quite straight, but the right angle of the mouth was still drawn up when he laughed. The ringing in the ears continued. He had occasionally a transient pain shooting from the left temple backwards through the head. His sight was weak, and Mr. Hulke, who examined his eyes with the ophthalmoscope, reported that the optic nerves were anæmic, but that there was no embolism of the arteries of the retina. He now got up every day; but on the 21st of November he complained so much of giddiness that he was obliged to keep his bed again for two days. He remained in the hospital till the 17th of December. At the time of his discharge, he was able to walk without any dragging of the left foot, and the mouth was straight, even when he laughed; but the left arm was still weak, and slightly wasted, the girth of the arm and fore-arm being about half an inch less than at the corresponding parts on the right side. He had apparently derived benefit from galvanism in an interrupted current. He was much troubled with attacks of painful spasmodic retraction of the left big toe. The basal systolic sound was now heard loudest to the right of the sternum, and there was here distinct pulsation appreciable both by the eye and hand. The urine had been examined daily since the patient's admission, but on no occasion had it contained a trace of albumen. On leaving the hospital, he was ordered iron and digitalis.

He continued attending as an out-patient until the 26th of February. On the 7th of January the pulsation to the right of the sternum was more distinct, and there was an appreciable difference between the radial pulses, which was confirmed by tracings with the sphygmograph taken by Dr. Sanderson. The right was much smaller and softer than the left. Three times in the preceding week the patient had experienced what he called an explosion in the left ear, followed by great giddiness. The power in the arm gradually returned, and on the 4th of February the girth of the two arms was equal.

On the 26th of Feburary, the patient was re-admitted with pains in his back and joints, and considerable swelling and slight redness of those of his left hand. The urine for the first time was found to contain a small quantity of albumen. He was also weaker and complained much of giddiness. After a few days this swelling subsided, but the arm was weaker again, and he complained much of giddiness and explosive sounds in the left ear, and on the 12th of March he

was seized with severe pain and tenderness between the left inner ankle and the heel, where there was slight swelling and redness, and the urine was found to contain quite a tenth (in volume) of albumen, with epithelial and blood-casts and a few oil-globules. On the 18th of March, the pain in the left ankle had subsided, but no pulsation could be felt in the left posterior tibial artery. After this the patient complained much of pain shooting down the left thigh and leg to the foot. On the 1st of April, when he again left the hospital at his own request, the urine contained as much as one-third of albumen.

During the following month, he came three times to the hospital. On the 8th of April, there were numerous purpurous blotches over the left thigh. On the 26th of April, his dyspnœa had increased; and on the 6th of May, there was considerable œdema of the left foot, extending up to the middle of the thigh, and there was also œdema of the left hand.

After this I heard nothing of the patient until the 30th of September, when Dr. Wilson Fox was good enough to write to me to say that he had died in University College, and that a *post-mortem* examination had been held the day before.

The diseased organs are now exhibited to the Society by Dr. Fox, and the appearances found confirm in most particulars the diagnosis formed during life; viz., that the symptoms were due to disease of the aortic valve, with embolism of one of the cerebral arteries and softening of the brain. In two points the diagnosis was not confirmed—1. The supervention of albuminuria after symptoms of embolism of the brain had led to the conclusion that there was embolism of the kidneys, but these organs were found to be large, smooth, and fatty, and to present no trace of embolism, old or recent. 2. The pulsation to the right of the sternum, and the smallness of the right radial pulse, seemed to indicate dilatation of the aorta, involving the innominate artery; but no such dilatation is said to have been found. The smallness of the right radial pulse, and the cessation of all pulsation in the left posterior tibial artery, were probably due to embolism; but unfortunately these vessels were not examined after death.

Dr. Murchison, 15*th of October*, 1867.

Report on the sequel of the above case.

The patient had been in University College Hospital during the greater part of the summer and autumn, and died shortly after admission for the second time, at the end of September, 1867. The case

illustrates the interesting fact of a recovery from paralysis, caused by the obstruction of the middle cerebral artery by embolism.

The patient had extensive dropsy, which was noticed to affect the left arm more than the right. He had, however, complete use of the left arm and leg; though some weakness was felt in the arm of this side. His intellect and special senses were sound; the urine was loaded with albumen. He suffered much from dyspnœa, and died rather suddenly.

Post-mortem examination.—There were no pericardial adhesions. The heart was considerably hypertrophied, chiefly on the left side. The aortic valves were almost completely destroyed, the portions of the flaps remaining being ragged and irregular, and covered with warty growths, so that the aortic orifice was also much narrowed. There was also considerable thickening and some atheroma of the flaps of the mitral valve. There was no dilatation, nor any other marked change of the aorta. The lungs presented no change of importance. The brain appeared to be healthy, except in the portion immediately below the Sylvian fissure of the right side. Here there was a tract, with an area of about three-quarters of an inch, much indurated, smooth, firm, and glistening on section, and pigmented in spots of a reddish-yellow colour. Small patches also occurred in it of a bright ochre colour, which were scattered in irregular specks, varying in size from that of a hemp-seed to that of a pea. These were comparatively soft, but dry and somewhat cheesy. In this area, two or three small cysts, none larger than a hemp-seed, were also found. The walls of these cysts were much indurated like the rest of this tract. These changes extended into the lower portions both of the optic thalamus and corpus striatum of the right side; but the upper parts forming the floors of the right ventricle were unchanged.

The anterior branch of the middle cerebral artery, immediately beyond its bifurcation, was completely obstructed by a firm mass of fibrous character, intimately and inseparably united with the coats of the artery. The posterior branch was also partially obstructed, but an irregular and pervious channel could be traced through it. This partial obstruction was due to a fibrous material which traversed the channel in the form of a sinuous band. In fact, a partial restoration of the calibre of the vessel had evidently taken place here. The arachnoid over the affected part was somewhat thickened; but no other change was noticed in the brain.

The liver presented no changes worthy of note; but there was a large infarctus in the spleen.

The kidneys were much enlarged, smooth, pale, and indurated, but of a pale-yellow colour, and the epithelium of the tubuli uriniferi had undergone extensive fatty degeneration. No other change could be discovered in them. Dr. Wilson Fox, *15th of October*, 1867.

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2. *Paralysis with muscular degeneration, (paralysie myosclérosique), or paralysis with apparent hypertrophy.**

Summary of the symptomatology.—"The clinical facts which serve as a basis for studying the symptomatology of the disease, show that paralysis with degeneration (sclérose) of muscles, or with *apparent* hypertrophy of muscles, is marked, in general, by three distinct periods or stages; a stage of paralysis, a stage of hypertrophy, and a stage in which the paralysis becomes general.

"1. The first stage is manifested either at the time when the children should begin to walk, or some years after they have begun.

"In the former case, although the conformation of the children be quite normal, and although while lying down, or in the arms of their mothers or nurses, they appear to possess their natural power of motion, yet when they arrive at the age of twelve or fourteen months, and an attempt is made to make them stand on their legs, they immediately fall down. It is not till they have attained the age of two or three years, that they are able to stand upright, or to walk, and even then they require support.

"In the latter case, that is, after these children have walked well for several years, it is remarked that either spontaneously or subsequently to some convulsions, they are soon fatigued by standing or walking; that without some support they find these operations become more and more difficult and painful, and that they are subject to frequent falls. Whatever may have been the age at which the malady first made its appearance, one soon discovers that in order to maintain their equilibrium while standing or walking, all these children bend themselves very much backward, and keep their legs very much apart; that at each step they incline laterally towards the leg which rests on the ground, a movement which produces a characteristic balancing of the body during progression.

* Translated from the French manuscript of Dr. Duchenne by Mr. Lockhart Clarke, and communicated by him, in the name of the author, with remarks.

"2. The second stage is usually announced some months, and even two years, after the beginning of the muscular weakness, by a progressive swelling or enlargement of the gastrocnemii, then of the glutei, and of the lumbar muscles of the spine. This apparent hypertrophy occurs sometimes in nearly all the muscles that have been affected by paralysis; but in general it does not, and it may even be limited to a very small number of them. The extension, to a greater or less extent, of the apparent hypertrophy of the muscles may constitute different varieties of this kind of paralysis, of which several examples are represented in the photographic figures, after nature, accompanying this paper. (See Plates I. and II.) The hypertrophied muscles are firm and elastic; they become very hard while they contract, and show all the relief or projection which properly belongs to their contracted state; they then appear to form a hernial protrusion through the integument, which is very thin: moreover, their great size shows off the apparent smallness and delicacy of the joints at the knee, ankle, etc.

"In one case that came under my observation, both the weakness and the muscular hypertrophy appear to have shown themselves simultaneously. (See Plate I., figs. 3 and 4.) According to the information given by the mother, the child was very large at its birth; but this information is insufficient; we ought to know whether the great size of the body and of the limbs was or was not due rather to the abundance of subcutaneous adipose tissue, than to the volume of the muscular masses.

"The increase in the size of the muscles does not appear to add to their weakness. This is so far from being the case, that the muscles of the calves, which are always the most hypertrophied, are those which are found to have relatively the greatest power.

"The morbid phenomena above described may remain in the same state for years,—sometimes until a tolerably advanced period of youth.

"3. A new stage of the disease, and the last one, is manifested by a gradual increase in the severity and a more general extension of the paralysis. The young patients can no longer stand upright; they always remain in the recumbent posture, without any power to change the position in which they may be placed; and the upper extremities, if they have not hitherto been affected, soon lose all their movements. With this aggravation of the paralysis, the hypertrophied muscles may sometimes be seen to melt away, as it were, and then all the limbs and the trunk become atrophied *en masse*. Although in this stage the patients are reduced to a state of great weakness, they may neverthe-

less live for a considerable length of time. They are usually cut off by some intercurrent disease."

The figures in Plates I. and II., copied from photographs after nature, represent different varieties of apparent hypertrophy or paralysis with degeneration of muscles.

Plate I., figs. 1 and 2.—A boy, aged 8 years, seen from behind and from one side. He was attacked by paralysis with degeneration of muscles, at about the age of 6 years. All the muscles of the inferior members, the glutei, and the lumbar muscles of the spine, acquired progressively a considerable size, about a year after the weakness of the upper extremities began. This apparent hypertrophy of the muscles contrasted strongly with the emaciation of the upper extremities and trunk. The great curve in the back which is seen in this case (see fig. 2) always exists in this stage of the disease. This condition remained stationary for several years, after which the paralysis reached the upper extremities, and became general. The patient died in 1866, at the age of 14.*

Plate I., figs. 3 and 4.—A boy, aged 11 years, seen from behind and from one side, affected with paralysis and muscular degeneration from his earliest infancy. The apparent hypertrophy of the muscles is general, and gives to the limbs and body of the boy an athletic appearance. He is now at the Hospital St. Eugenie. I obtained, by means of my histological "emporte-pièce," small portions of the muscles, in which the microscope revealed the existence of hypertrophy of the interstitial connective tissue, with a tolerably abundant formation of fibrous tissue. A piece from one of the calves of the legs of the same subject, obtained by means of the "emporte-pièce," on the 25th of October, 1867, was prepared and examined by Mr. Lockhart Clarke.

Plate II., fig. 1.—A boy, aged 9 years, attacked by paralysis with degeneration of muscles. The volume of the gastrocnemii increased enormously a few months after the first appearance of the paralysis of the inferior extremities. The glutei and the lumbar muscles of the spine at the same time increased in size, but in a less degree; curving of the back while standing upright or walking; separation of the legs, and lateral deviation of the trunk during progression. Persistence of the same condition in spite of faradization (which showed that the electro-muscular contractility was intact), hydropathy, and shampooing. This patient, who was first seen in 1861, in my private practice, changed

* This case was described in detail by Dr. Duchenne, in the second edition of his work on "l'Electrisation Localisée" p. 203. It was used for drawing a picture of this disease, which he then called "*paraplégie hypertrophique de l'enfance.*"

DESCRIPTION OF PLATE I.

This Plate illustrates Dr. Duchenne's Cases of Paralysis with Degeneration and apparent Hypertrophy of the Muscles. The figures have been drawn from photographs taken by Dr. Duchenne.

Figs. 1 and 2. Two views of a boy aged 8, from behind and in profile. The details of the case will be found at p. 8.

Figs. 3 and 4. Two views of a boy aged 11, from behind and from one side. The apparent hypertrophy of the muscles is general. The details of the case will also be found at p. 8.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Dr Duchenne phot. B George sc.

B. George imp.

his residence in 1864. His neighbours state that, a year before he left, he was constantly confined to his bed, and that the paralysis had reached his upper extremities.

Plate II., fig. 2.—A boy, aged 7½ years, afflicted with the same disease, and who began to walk very late. Intellect dull, and muscular weakness from his earliest infancy. At the age of 4 years, there was very evident increase in the size of his calves and of the glutei and lumbar muscles of the spine, but in a less degree than in the preceding cases. The symptoms and general course of the malady, however, were the same. Thus, while walking or standing, there was great curving of the loins, separation of the inferior extremities, and lateral bending of the trunk at each step; then, after remaining for some years stationary, the paralysis reached the upper extremities and abolished all movement. He died in 1865, at the age of 13 years. He first came under observation in 1860, in my private practice.

Dr. Duchenne *(of Boulogne)*, 19*th of December*, 1867.

Remarks by Mr. Lockhart Clarke.—Of the cases represented in the following figures, by far the most remarkable was the boy (Plate I., figs. 3 and 4) whom I saw with Dr. Duchenne in the Hospital St. Eugenie, under the care of Dr. Bergeron. He looked like a little Hercules. Every visible muscle of the body, except the pectorals, was enormously developed; his head, even, appeared swollen, and the temporal muscles stood out like convex shells. Yet, when the poor boy attempted to walk, he laboured to get along, presenting the most grotesque appearance; and when laid on the ground, he was wholly unable to rise by his own unaided efforts. The expression of his countenance was dull and heavy, but yet he was tolerably intelligent, and seemed very fond of money.

Dr. Duchenne informs me that he has been studying this disease for the last eleven years, and that he is now preparing a small work on the subject. Several cases have already been recorded on the Continent, and *post-mortem* examinations have been made. Eulenberg and Cohnheim examined the body of a child who died of this disease at the age of 13 years. They found the electro-muscular contractility everywhere normal. Nothing abnormal was discovered in the nervous and vascular systems. To the touch, the muscles of the lower limbs gave the sensation of a doughy or inelastic mass. They were marked with stripes of a yellow or yellowish-white appearance. On section, they shone with a kind of greasy lustre. At certain points they could not be distinguished by the naked eye, from the subcutaneous adipose

tissue. The muscles of the upper extremities presented a similar kind of structure, but they were much atrophied, as were also those of the trunk. Under the microscope, those especially of the lower extremities seemed to be filled with adipose tissue; but the muscular tissue itself was not altered. Griesinger and Billroth had already observed a similar state in the living subject. It is rare, however, to find any oily particles in them. (*Verhandl. d. Berliner Med. Ges.* i., 101-205.)

Heller, who examined two brothers that died of this disease, seems to consider it as a kind of fatty degeneration, for he calls it lipomatosis. (*Deutches Archiv. Klin. Med.* i., 616-627.)

Seidel also records three cases belonging to the same family, under the term of "lipomatous atrophy of the muscles, or muscular atrophy."

By means of an ingenious instrument which he has himself invented, Dr. Duchenne has been able to obtain small portions of the muscles from different parts of the boy whose appearance is represented in Plate I., figs. 3 and 4. In these specimens of muscular tissue, when examined under the microscope, he discovered evident hypertrophy of the interstitial connective tissue, with a rather abundant formation of wavy fibrous tissue. In a piece which he removed in my presence from one of the calves of the same boy, I found a similar increase of fibrous and connective tissue; and I also found, what I had not seen in Dr. Duchenne's preparation, large collections of adipose tissue between the bundles of muscular fibre. The muscular fibre itself, however, appeared to be unaffected; and although numerous oil-globules were scattered here and there, they resulted, I believe, from rupture of the fat-cells; for they were not incorporated with the muscular fibre, as in the case of fatty degeneration.

The ingenious contrivance which Dr. Duchenne has invented for obtaining portions of muscle from the living subject, and which he calls his "emporte-pièce," is very superior to the *harpon* or hook invented by Middeldorpf, and employed in Germany. It consists of a steel cylindrical rod, divisible longitudinally into two halves. One of these is fixed to a handle by means of a screw, and terminates at the free end in a small hollow cone, the base or lower border of which has a sharply cutting edge. When closed, the two pieces together form a small cylindrical rod with a fine point. As soon as it is made in this state to penetrate a muscle, the hollow cone is opened by sliding down the other half of the rod, and encloses a small portion of the muscles, which it cuts away by means of its sharp edge.

Mr. J. Lockhart Clarke, 19*th of November*, 1867.

3. *Case of progressive muscular paralysis, associated with hypertrophy, or apparent hypertrophy, of the muscles of the calf of the leg.*

Mr. Adams observed: The boy whom I have brought before the Society this evening, for the purpose of being examined by the members of this Society, affords, I believe, a well-marked example of that peculiar form of progressive paralysis, associated with hypertrophy of muscles, which was brought before the Society at its last meeting by M. Duchenne, of Boulogne, in a communication made through Mr. Lockhart Clarke.

The boy now exhibited, John Dickety, aged 7½ years (see Plate II., fig. 3), was recently admitted into the Orthopædic Hospital, under the care of my colleague, Mr. Tamplin. Both calves are greatly hypertrophied, measuring ten inches and a quarter in circumference. The gastrocnemii muscles are not only prominent and well defined in outline, but remarkably hard and tense, yielding but little under pressure. They are also contracted in their length; or, as we commonly but erroneously describe it, the Achilles tendons are contracted, so as to produce some degree of elevation of the os calcis. This it is that has led to the most prominent symptom in the case; viz., a disposition to trip and frequently fall in walking, for which advice was sought.

Both thighs in this boy look disproportionately small, and the muscles are soft and flaccid, contrasting remarkably with the condition of the calves. In circumference, the thighs measure, a little above the centre, eleven inches and a quarter. The nates are also small and soft, but not in a remarkable degree, and the spinal muscles are in a similar condition.

In both upper extremities, the muscles of the fore-arm appear to be developed beyond their normal size, and a little below the elbow-joint the muscles are prominent and tense; or they might be described as unusually firm, and yielding little to pressure, whilst the muscles of the upper arm appear to be disproportionately small, and are comparatively soft and flaccid, though not in a very marked degree; and both the biceps and triceps contract with some firmness when put in action. The boy can grasp with fully the natural degree of power; but when he flexes the fore-arm upon the arm, in the act of carrying his hand to his mouth, it requires but little force to overcome the power he exerts, so that in its power of contraction the biceps is evidently feeble. Both the biceps and triceps appear to be in an early stage of atrophy or degeneration. The deltoid muscle in

both arms is peculiarly prominent, and stands out in bold relief, its outline being distinct, and its structure firm to the touch. I should say that this muscle is somewhat hypertrophied. All the other muscles in the neighbourhood of the shoulder are more feeble than natural. There is nothing remarkable in any of the muscles of the neck or face.

The mental condition of this boy is peculiar. He is dull, heavy, indolent, and apathetic; never lively or playful amongst the other boys in the same ward. He is more inclined to be mischievous than playful. His habits are dirty, and the sister of the hospital says he is too indolent to be clean. Nevertheless, he answers questions in an intelligent manner; and his mental deficiency is peculiar and limited.

His general health seems to be good, and he is rather a large feeder.

The disposition to trip and fall in walking has been noticed for a year or more; and, although the family history has not been fully obtained, it is said that this boy has an older brother, about 16 years of age, who is unable to walk, and in a perfectly helpless condition, and therefore probably in an advanced stage of the same disease.

This boy may be considered as exhibiting the disease in its earliest stage, and may well be compared with the boy, in a more advanced stage of the same disease, now under Dr. Hillier's care, at the Hospital for Sick Children, and to be exhibited to the Society; and also with another boy, aged 11, in a much more advanced stage of the disease, being totally unable to stand, admitted this day, the 3rd of December, under Mr. Adams's care, at the Orthopædic Hospital.

Mr. Adams observed that during the last ten years he had had several similar cases under his care in private practice, one of which, a young gentleman, aged 14, died in May last, and that four cases are now under his observation; but he had only latterly recognized the serious importance of the disease, and its early characteristic of being associated with hypertrophy of the muscles of the calf of the leg.

Mr. William Adams, *3rd of December*, 1867.

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4. *Case of progressive paralysis, with large calves.*

The case exhibited is that of a boy, aged 10 years and 11 months. It is believed to be of the same nature as that described by M. Duchenne, in a paper recently read to the Society by Mr. Lockhart Clarke. The

disease has been called paralysis with apparent hypertrophy; "paralysie myosclérosique;" "lipomatosis luxurians musculorum progressiva."

In this case, the mother gives the following account of her son:—He has always apparently enjoyed good health, except in respect to muscular power. He has had no fits, and suffered no pain. He could not stand till he was 21 months old, and from this age he began to walk imperfectly. He has never walked firmly with his legs near together, and has never run or jumped in his life.

When about 3 years old, and until he was 8 or 9 years, his calves were larger than those of other boys of his age, and looked very round and bulging when he stood upright. From the age of 6 or 7 years he became less and less able to walk, swaggering very much, and frequently tumbling down; he could not put his feet flat on the ground, because his heels were drawn up when he tried to walk. He went to school until he was 10 years old; but for the last eleven months he has discontinued going there, because of the difficulty he has had to walk: for three months past he has been quite unable to stand. His arms were strong, but they were of moderate size until he was about 5 years old, since which they have wasted gradually; they have become decidedly weaker during the last twelve months. He has never had power to cut up his food.

His mother has never heard of any similar weakness in any other member of her family.

At the present time he looks tolerably healthy, and as he lies in bed he can move his limbs in any direction, but with no great force. His arms and fore-arms are thin, and the muscles of his thorax are small. He grasps feebly with both hands, and uses all the muscles of his upper limbs, but without much power. He cannot raise himself to the sitting posture without laying hold of something to pull by; he cannot get out of bed unassisted; he can sit up and play with toys, but cannot use a knife and fork. When he is supported by his arms, and tries to stand, his heels are drawn up, and the lower part of his spine is arched forward.

He can with difficulty support himself in a standing posture, by resting his hands on something on each side of him and his nates against a wall. The calves are very large in proportion to his other muscles; although not absolutely large for a boy his age, yet they are certainly large, when it is remembered how little he has used them. The right calf measures nine inches and three-quarters, the left nine inches. His thighs are small; the right measures ten inches and a quarter, and

the left ten inches and three-eighths. The middle of his right arm measures six inches and a quarter, of his left five inches and five-eighths; his right fore-arm measures six inches, and his left six inches and three-quarters. The muscles of his legs have rather a doughy consistence. When he is lying with his legs extended, his feet cannot be brought quite to a right angle with his legs.

At the upper and inner part of each crista ilii, there is a slight bulging, apparently from enlargement of the erector spinæ and quadratus lumborum muscles. There is no obvious loss of electro-muscular contractility in the weakened muscles.

This case appears to me to be a connecting link between the cases of progressive muscular debility described by Duchenne, Griesinger, Eulenberg, and others, in which there is notable enlargement of muscles, and such cases as those reported by Dr. Meryon in Vol. XXXV. of the Medico-Chirurgical Society's Transactions, where progressive paralysis also existed without obvious enlargement of any of the muscles.

There is, however, a discrepancy in the microscopical anatomical appearances described. In the former cases there has been found an increase of fatty tissue, and occasionally of connective tissue, between the muscular fibres. Colnheim (*Verhandlungen der Berliner Medicinischen Gesellschaft*, *Heft* 2, 1866, page 200) has also found that many of the muscular fibres themselves are reduced in size to one-fifth of their normal diameter; and that there are also in the most atrophied muscles empty sheaths of sarcolemma, and in some of the muscles a few muscular fibres of abnormal magnitude. To isolate the muscular fibres, he has used a solution of three-quarters of a volume of concentrated hydro-chloric acid in ninety per cent. of alcohol, and ten per cent. of water, and treated the muscle by gently boiling it with this for five or six hours. No granular or fatty change has been found in the muscular fibres themselves.

In Dr. Meryon's cases, on the contrary, there was observed a granular degeneration of the muscular fibre itself, with rupture of the sarcolemma.

The course followed in both sets of cases is remarkably similar. Both are characterized by their slow progress; by occurring in childhood, and nearly always in males; and by manifesting, as the first symptom, defective walking, the upper extremities becoming subsequently weakened. There is an entire absence of muscular quiverings and spasms, and of other signs of nervous lesion. The power over the

sphincters remains unimpaired; and hitherto there has been no anatomical change found in the nervous structures.

Dr. Meryon's cases have been classed by Dr. Roberts and others with Cruveilhier's atrophy but they appear to me to differ essentially from that disease, in the absence of muscular tremors, and in the slight amount of atrophy, as well as in their general course, and in the age of the patients attacked. Dr. Hillier, 17*th of December*, 1867.

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5. *Case of localized muscular atrophy.*

This case presents an interesting contrast to the one last exhibited. It is a case of rapid wasting of muscles, with some atrophy of skin, occurring at four or five different parts of the body, and not accompanied with proportionate loss of power. (See Plate II., fig. 4.)

Margaret Dolan, aged 8 years, had typhoid fever fourteen months ago. She recovered from this, but did not regain her former strength. Six months later her mother noticed that the left buttock was wasted, and this wasting has continued to increase ever since. Soon afterwards the left fore-arm was seen to be wasting, and a little later the left shoulder.

Three months ago she came under my care. I found her generally not well nourished. But what was specially remarkable was wasting of the left deltoid and supra-spinatus muscles; there was also wasting on the outer side of the left fore-arm. The left gluteal muscles are much flatter than the right, and as she stands there is a constant quivering under the skin of this part. There is some wasting of the muscles of the right leg. The skin over the atrophied muscles is pale, mottled, and puckered—in some places it is thinned, and looks scar-like. There is no obvious paralysis in any of these muscles. She cannot stand on the left leg only, quite so well as on the right. She has now been under observation for nearly three months, during which her general nutrition has much improved. The muscles of the atrophied shoulder have almost regained their normal size, also those of the fore-arm and leg. The gluteal muscles are more atrophied than on admission, but less so than they were a month ago. The skin of this part has nearly regained its healthy appearance. There has appeared fresh atrophy on the outer side of the back of the right arm, above the elbow, and on the outer side of the left thigh, involving apparently the tensor vaginæ femoris.

The muscles throughout have retained their electro-muscular con-

tractility intact. At the time of the patient's admission, there was frequently observed a remarkable quivering of the muscular fibres in the atrophied buttock.

The great peculiarity is the amount of atrophy, and its rapid development, at several distinct points, some muscles recovering whilst others are becoming more atrophied. There is also remarkably little failure of power. The slight amount of paralysis is probably due to its not involving the whole of a muscle at once. It differs entirely from essential paralysis so common in children, in which there is a sudden loss of power in a limb or limbs, followed after a time by partial recovery and atrophy in the muscles which do not regain their power. It differs also from Dr. Meryon's cases in the localized character of the atrophy, and in the very slight improvement of muscular power. I have not been able to meet with a case exactly parallel to it on record. It differs from Cruveilhier's atrophy in its course, and in the peculiar condition of the skin over the atrophied muscles. Dr. Hillier, 17*th of December*, 1867.

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6. *Case of paraplegia, produced by pressure upon the spinal cord, from a morbid mass connected with the bodies of the vertebræ. Death somewhat sudden.*

The specimen consisted of several of the vertebræ which had been sawn through, displaying the spinal canal and its contents. The contiguous portions of the bodies of the third and fourth dorsal vertebræ were partially destroyed, and at this part a mass of softened material existed, which projected forwards from the bodies and sides of the above-mentioned vertebræ, and also backwards into the spinal canal, causing pressure (as seen by the woodcut) at the corresponding part of the spinal cord. The spinal dura mater was, though displaced backwards, quite entire, smooth, shining, and healthy looking; the other membranes of the cord at this part, however, were injected and distended, giving a reddened aspect to the surface of the cord. At this part the medulla (owing to pressure) was much diminished in size, thinned, and somewhat softened. The mass in front of the affected vertebræ was equal in size to a hen's egg, and proved, on removing the tough and hardened investment formed of pleura and other tissues, to be soft and pulpy, having at first sight, from its colour and consis-

DESCRIPTION OF PLATE II.

This Plate illustrates Cases of Paralysis with Muscular Degeneration, reported by Dr. Duchenne, Mr. W. Adams, and Dr. Hillier. The figures have been drawn from photographs.

Fig. 1 represents the posterior view of a boy aged 9, whose case is described by Dr. Duchenne at p. 8.

Fig. 2 represents the posterior view of a boy aged 7 years and a half, whose case is described by Dr. Duchenne at p. 9.

Fig. 3 represents the posterior view of J. D., aged 7 years and a half, exhibited by Mr. W. Adams (p. 11).

Fig. 4 represents the posterior view of M. D., aged 8, affected with localized muscular atrophy, and exhibited by Dr. Hillier (p. 15).

Fig. 1.

Dr Duchenne &c phot. B George sc.

Fig. 2.

Fig. 3.

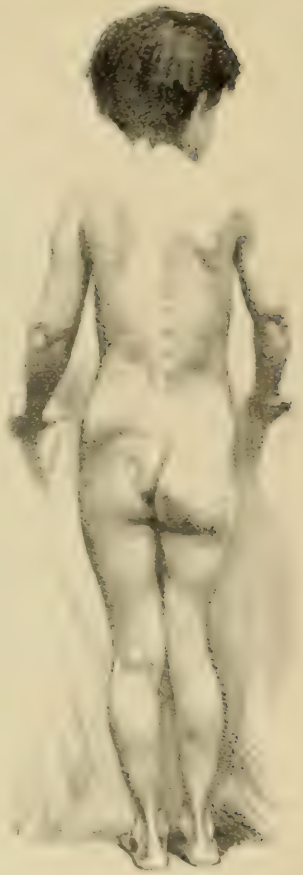

Fig. 4

B George imp

tence, the appearance of being carcinomatous in character. On dissecting the parts subsequently to the meeting, it was found that the mass was apparently connected primarily with disease of the intervertebral cartilage; viz., that between the third and fourth dorsal vertebræ. The cartilage had evidently first given way and become disintegrated, and the material formed in its place and in connection

Woodcut 1.

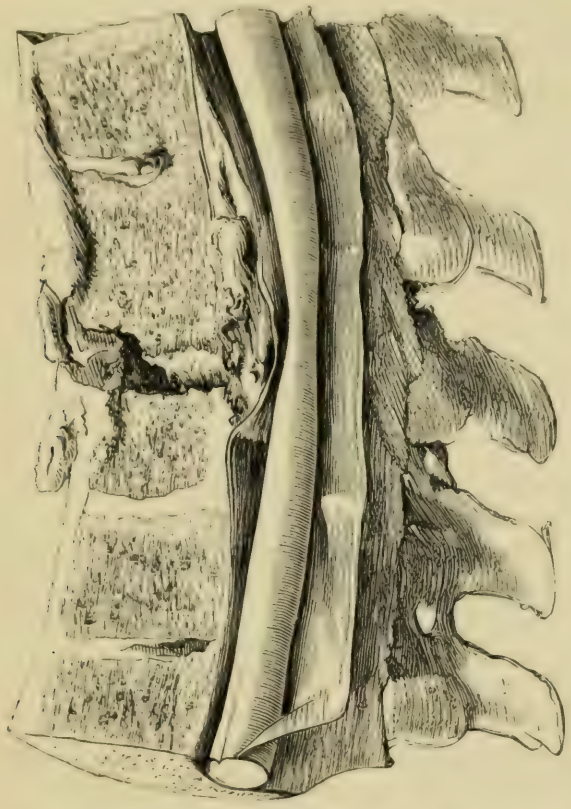

Fig. 1 shows a vertical section through the diseased vertebræ, and the compressed spinal cord

with it had penetrated forwards, forming the mass before described in front of the vertebræ, and also backwards on to the spinal cord, as referred to above.* (See Fig. 1.)

* Dr. Ogle referred to two *post-mortem* examinations of which he had notes, in which the intervertebral cartilage was evidently the seat of primary disease, which affected the bodies of contiguous vertebræ subsequently. One was the case of a man, aged 26, who was admitted into St. George's Hospital, on the 7th of January, 1863, under Mr. Pollock, with a sinus in connection with abscess and disease of the

The specimen was removed from the body of Maria B., aged 60, who was admitted into St. George's Hospital, on November 6th, 1867, with loss of power in the legs, which had gradually come on for three months. She had never been married, and, until the three months before admission, had enjoyed good health. There had been no accident or any known cause of her illness. In addition to loss of muscular power of the legs, there was considerable (though not entire) insensibility of the surface of the legs and of the lower part of the body, and also loss of power of the sphincter of the bladder. There was, however, no loss of warmth of the paralysed parts. The legs were also œdematous. The urine was free from albumen or sugar. There was no pain in the back, and nothing wrong was found on examination by the surgeon, about the spinal column—no tenderness on pressure, no deviation as regards the spinous processes from the right direction in any way. She was treated with good diet, and with steel and small doses of strychnia. Three days after admission, she complained of considerable pain in the legs; but otherwise she remained much in the same state until the evening of the 16th, when she got out of bed to stool, and as she got out she fainted, and quickly sank and died.

On *post-mortem* examination, in addition to the above-described affection of the spinal column and cord, the pons Varolii and medulla oblongata were found to be rather softened; the left hemisphere of the cerebellum was also somewhat softer than its fellow. The liver and kidneys were congested, and the capsule of the spleen rather thickened. Some fibrous tumours were connected with the uterus and its appendages; and of these, one, of the size of a hen's egg, had undergone calcareous changes. In the pleural cavities of both sides, ex-

femur. An abscess formed in the lumbar region before death; after which, in addition to pulmonary phthisis, the cartilage between the last dorsal and the first lumbar vertebra was totally destroyed. The cartilage next below was also superficially affected, and both psoas muscles were excavated by pus. (See Post-mortem Book, 1863, fol. 69.) The second case was that of a man, aged 41, who was admitted, under Dr. Pitman's care on the 18th of February, 1863, with partial paraplegia, but with very considerable reflex action on tickling the feet. Phthisical symptoms set in before death; after death, the cartilage between the fifth and sixth dorsal vertebræ was quite destroyed, and the adjoining surfaces of bone were diseased. Much pus had collected in the spinal canal corresponding, pressing on the cord and narrowing it, but not softening or otherwise altering its structure. (See Post-mortem Book, 1863, fol. 144.) Dr. Ogle has also, when curator of the Pathological Museum, once or twice met with disease of the intervetebral cartilage in its early stage, beginning with softening of the central part of the cartilage.

tensive pleural adhesions existed; the lungs were rather collapsed, and destitute of air. The heart was very large, weighing fourteen ounces, and both ventricles were contracted and empty. Some thickening of the free edge of the mitral valve-flaps existed, and the left ventricle was much dilated. Much atheroma of the aorta was found.*

Remarks.—Dr. Ogle adduced the case, not so much for the sake of any consideration as to the pathology of the morbid mass which he had been unable minutely to examine, but mainly in reference to the paraplegic symptoms in connection with the pressure on the spinal cord. It was interesting to be able to notice, as the specimen allowed one to do, the early and uncomplicated stage of such an affection; for the patient had died before the disease had advanced so far as to produce destruction of the theca vertebralis, or any other effect beyond the mere trapping, so to say, of the cord. Thus there were no symptoms of inflammation of the spinal membranes, or of the spinal cord; no pain at the affected part had been complained of, and there had been no spasm of the muscles of the legs, and no indication of interference with the vaso-motor nerves, etc. Three days only before death was there pain in the legs. The main symptoms—the loss of power of the legs, the defective sensibility of the skin, and the paralysis of the sphincters—closely corresponded with the appearances of the spinal cord (found after death), and were simply due to the destruction of its function, owing to atrophy of its structure, as a result of mechanical injury.

The exact cause of the sudden death was obscure; probably it was due to the sudden call upon the powers of a weakened and dilated heart. Dr. Ogle remembered another case of paraplegia at St. George's Hospital, in which sudden death occurred whilst the patient was eating. In that case (1858, fol. 154), the paralysis was owing to fracture of the lower part of the spinal column, and the patient lived twenty-seven weeks after the accident.

Dr. J. W. Ogle, 19*th of November*, 1867.

Report by the Committee on Morbid Growths on Dr. Ogle's specimen of disease of the spine.—There was no evidence of malignant disease in the specimen submitted to our notice. The intervertebral substance between the third and fourth dorsal vertebræ had entirely disappeared, and the corresponding osseous surfaces had become much eroded and roughened,

* See Hospital Post-mortem Book, 1867, fol. 292.

and were in contact with each other. Much thickened purulent exudation had collected about the seat of the disease and formed a soft swelling under the periosteum, which encroached upon the spinal canal and had pressed upon the cord. The case appears to be one of caries.

17*th of December*, 1867.

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7. *Two cases of tumour of the pons Varolii.*

These specimens, which I exhibit for Dr. Allbutt, of Leeds, are the brains from two cases which were under his treatment in the Leeds Infirmary at the same time.

The one is from a youth, of 18 years of age, and the other from a girl, of about 9 years. Their symptoms were much alike, as this scheme of them will show:—

Boy.	*Girl.*
Granular left conjunctiva.	Ulceration of left conjunctiva.
Paralysis of left sixth nerve.	Paralysis of left sixth nerve.
Paralysis of left seventh nerve.	Paralysis of left seventh nerve.
Doubtful deafness of left ear.	Deafness of left ear.
Paralysis of right limbs.	Paralysis of right limbs.
Gradual advance of paralysis to left limbs.	No extension to left side.
No vomiting.	Vomiting for many weeks.
Faculty of speech unaffected.	Faculty of speech unaffected.
Mental state, fair.	Mental state, fair.
Optic discs and retinæ, natural.	Optic discs and retinæ, natural.
Death from suffocation.	Death from increasing stupor.
No albumen or sugar in the urine.	No albumen or sugar in the urine.
Sensation, doubtful.	Sensation, doubtful.

The mouth was much drawn to the right in both, and the orbicularis in both quite paralysed. Careful experiments on the sensation in both cases were all contradictory of each other. The temporal and buccinator muscles were not paralysed.

In both cases, Dr. Allbutt was able, from the commencement, to point out exactly the seat of the disease. In the little girl, who died first, his opinion was verified, and he could use her brain in illustration of the case of the survivor.

These cases serve to illustrate the truth that it makes no difference in the symptoms what kind of tumour is present in the brain; the symptoms depend on the part that is implicated. The indications of position in these cases were very conclusive, paralysis of those nerves that come from the left side of the pons being associated with the right hemiplegia, which would arise from disease of the left half of the pons. But the tumours are found, on inspection, to be of very different natures, although they coincide remarkably in situation. The tumour in the boy's brain is a tumour in the nervous tissue, while that in the girl's brain is a villous growth of the pia mater. The more particular examination of these tumours gives me the following results:—

1. In the boy's brain, the tumour involves the pons, chiefly its left side, so that the origins of the left fifth and seventh nerves are included in its edge, whilst the corresponding nerves of the right side are a third of an inch from it. The body of the pons on both sides is, however, largely implicated. It overhangs, but does not invade, the crura cerebri. The left side of the medulla oblongata, especially its anterior pyramid and olivary body, is enlarged, and also the same parts of the right side to a less extent. The pia mater has been removed from the brain, and with it the smaller nerves, so that I cannot discover their positions. The surface of the tumour is raised in smaller or larger lobe-like elevations, but is not villous, and the tumour is of the substance of the brain, and not of its membranes, which have indeed been stripped from most part of the tumour, as well as from the unchanged parts of the brain. Its substance is composed of large corpuscles, irregular in outline, separated by an inter-corpuscular substance of about twice their quantity. (See Plate X., fig. 3.) The inter-corpuscular substance is minutely granular and fribrillated. The corpuscles are connected with the fine fibrils, and sometimes their angles throw out pointed processes to make this connection. In the inter-corpuscular matter a few fine nerve-fibres are present. The corpuscles are irregular in size: the largest are somewhat greater than white blood-cells; the smaller are less in size than red blood-corpuscles: these two sizes prevail. In the larger corpuscles are several nucleoli. Capillary vessels are present in moderate proportion. I am not permitted to cut into the substance of the brain, but evidently the tumour is of the "infiltrating" kind; no defined outline can be seen. These characters come within the description given of "Glioma," or a tumour of the connective substance of the nervous centres.

2. In the brain of the little girl, the tumour involves the left crus

cerebelli, the left side of the pons, and the lower and inner part of the left lobe of the cerebellum; also the left side of the upper half of the medulla oblongata, where it extends across the middle line, to include the right anterior pyramid. The left fifth, sixth, seventh, and part of the eighth nerves can be seen springing from the tumour. The left side of the floor of the fourth ventricle is elevated by, and in the neighbourhood of, the tumour; the parts on the right side are compressed by the swelling of those on the left. The surface of the tumour is irregular, being formed of excrescent elevations, giving an appearance like the so-called cauliflower growth. It is formed of minute dendritic villosities. (See Plate XIII., figs. 5 and 6.) The arachnoid membrane is separable from the tumour, which grows from the pia mater. Examined by a low power, the bulk of the tumour is found composed of ramifications of blood-vessels, the branches being numerous and closely set. Upon these blood-vessels is a covering of cellular formation, which a higher power shows to be composed of nuclei of the size of pus-corpuscles or slightly larger, very uniform in size. These nuclei are oval in form, and contain many small nucleoli. Around the nuclei the cell-wall can rarely be seen; when discovered, it is found to fit closely to the nucleus, and sometimes to throw off one or two pointed processes. (Plate XIII., fig. 7.) The blood-vessels have very thin walls, composed of a single membrane, which is made up of flat cells placed in apposition.

I have made sketches of the microscopic appearances of both of these growths. The latter is particularly interesting. The villous form of any tumour supposes a cavity into which the villi can produce themselves; more than that, very probably, the determining cause of the projecting character of the growths is the absence of counter-pressure. Although the sub-arachnoid "space" is not free, being occupied by very delicate lax cellular tissue, yet this tissue is so very slightly constructed that there is practically no resistance to the production of villosities into the "space," and hence the occurrence of villous growth here. I should say that the preparations had been long in spirit at the time when the microscopic examinations were made.

Dr. Moxon *for* Dr. Allbutt, 21*st of January*, 1868.

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8. *Circumscribed abscess in the left cerebral hemisphere.*

The patient, E. C., aged 24, was brought into the Great Northern

Hospital on the night of the 30th of December, 1867, in a state of unconsciousness. I saw her first on the 1st of January, 1868, and found her in the following condition:—

She was lying on her back, low down in the bed, with the face inclined to the left side and slightly flushed, with the eyes closed, and the mouth firmly shut, looking like a person in a rather deep sleep. The head was not hot; the skin generally warm and soft, but dry; the extremities warm. Pulse, 100, rather variable in rhythm and force. Heart's sounds clear; impulse natural. Respirations, 24, equal and regular; the movements entirely pectoral. Percussion and auscultation disclosed nothing abnormal. The abdomen looked peculiarly retracted, so as to be concave; the abdominal wall did not move in respiration, and was soft and supple. The bowels had been opened since she came into the hospital after a dose of calomel and an assafœtida enema. The urine was said to dribble away. There appeared to be no paralysis of the face or limbs, and the latter were slightly moved now and then. The pupils were unequal, the left being larger than the right, but neither was of very unusual size, and I was not able to learn which was normal; they were almost insensible to light, but sometimes oscillated slightly. It was not possible to rouse the patient, and she had remained in the same state since her admission, save that her pulse was reported as having been, at that time, only 40. When a spoonful of fluid was introduced far back into the mouth, it was swallowed perfectly, though rather slowly; and, after two or three spoonfuls had been thus given, the teeth always were clenched and remained so for some time. Pinching and tickling excited reflex movements of the limbs, and, on sharp pinching, the breathing became hurried, and the features assumed an expression of distress, as though there were some sensation of pain.

Her history was, at first, only very imperfectly obtained; but it was completed afterwards, and was as follows:—The patient was of a healthy family, both her parents being alive and in good health. At 15, she had had a severe and long-lasting attack of rheumatic fever; at 17 or 18, she had had small-pox. She married when 18, and had one child, now alive and healthy. She had been for some time separated from her husband, and lived with her mother, assisting in her work as a laundress. She enjoyed good health till about six months ago, when she became an out-patient of the hospital, under my colleague, Dr. Jephson, on account of pains in the head and joints, with severe redness and swelling of the latter. She was treated for chronic

rheumatism, and the attack passed off in a few days, but recurred rather frequently, her health being apparently perfect between the attacks. Two weeks before Christmas she attended at the hospital, complaining, as usual, of swollen and painful joints, and of unusually severe headache; and the headache continued severe and incessant till the 26th of December, when she suddenly became "unconscious, and talked a good deal in a rambling manner." At the same time, severe fits of shivering occurred every hour or so, lasting ten minutes at a time; during their continuance, the surface of the body was very cold. Hot bottles, blankets, and brandy and water appeared to give some relief, but the rigors continued to come on throughout the 26th, 27th, and 28th. During these days she took the brandy and water easily and well. On the 29th she seemed paralysed. The bowels had been costive all through this attack, and the urine had been passed involuntarily during the rigors. Menstruation had been regular. There had not been any sickness.

She was given an injection of beef-tea with brandy, every four hours, which was always retained. Carbonate of ammonia and spirit of chloroform were given by the mouth; but it became gradually more difficult to administer anything in this way, the jaws becoming more constantly and firmly closed. Some urine was obtained by the catheter three or four times, and was always free from albumen. A blister was applied to the nape of the neck on January 2nd, and rose well; but the patient remained in very much the same condition as when I first saw her, and on January 3rd she suddenly died, without there having been any stertor or convulsion. On the last two days, the heat of the trunk, limbs, and extremities felt abnormally great, and on taking the temperature in the axilla it was found to be 100·8° Fahr.

The *post-mortem* examination was made, 30 hours after death, by my colleague, Dr. Crucknell.

The body presented no marks of violence or injury, was remarkably well shaped and fairly nourished; the hair of the head was very long and plentiful; the pupils were moderately dilated and equal; the abdomen was unusually retracted, so as to appear concave; beneath the skin was a layer of fat, about half an inch thick. On removing the dura mater, which was of normal appearance, the pia mater covering the hemispheres was much congested, and most so on the left side, and the veins were turgid. On the surface of the left hemisphere, near its anterior extremity, was some diffluent puriform pulp, of a greyish-pink colour, and fetid smell, which, on removing the brain, was found to

issue from some internal source. On slicing the brain, this fluid, of which there was about an ounce and a half, was seen to proceed from a cavity in the left anterior lobe, of oval form, two inches long by one and a half wide, with a well-defined dark border, and bounded behind by the anterior commissure. This cavity communicated freely with the upper surface of the brain, but did not extend to the base. The adjacent cerebral tissue was firm, and free from congestion. The cerebellum was healthy. The ventricles contained no excess of fluid. The vessels at the base of the brain were carefully examined, and the left anterior and middle cerebral arteries traced to their disappearance in the brain-substance, but nothing abnormal was found in them. The pia mater, which dipped into the fissure of Sylvius, was slightly congested on both sides. There was nowhere any appearance of disease of the dura mater or of the bones of the skull. The heart and lungs were quite normal, excepting slight congestion of the latter. The kidneys were deeply congested, but, under the microscope, appeared healthy. The stomach was empty and collapsed. All the other viscera were healthy. The blood was uncoagulated.

Dr. W. CHOLMELEY, *4th of February*, 1868.

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9. *Morbid deposit in the brain simulating cancer, in a case of hemiplegia.*

The specimen was obtained from the body of William P., aged 49, who died on the 22nd of January, 1868. Few particulars of his previous history were obtained. Six weeks before his death he was found lying at the bottom of some steps leading from the court where he lived to the street. He was conscious when found, but did not know what had happened. Since then his left side had been partly paralysed; he had latterly passed large quantities of pale-coloured urine, and his appetite had been ravenous. The urine passed whilst he was in the hospital was albuminous.

On the 26th of January, he was found by the police in a fit, and brought to the hospital, at half-past two P.M., insensible,—his face flushed, pupils natural, pulse 130. He had nine fits in the first three hours after his admission; the convulsions were unilateral, being confined to the left side. From five P.M. to half-past ten P.M., he had a constant succession of fits, each lasting about three minutes, and with the interval of about a minute between each. After half-past ten P.M. he had

no more convulsions, but the coma increased, and he died in about seventeen hours.

Post-mortem examination.—The body was stout and well nourished. There was nothing unusual about the skull or the membranes of the brain; the cerebral hemispheres were a little congested, the puncta cruenta being numerous. Situated in the left optic thalamus, just anterior to the soft commissure, and encroaching on the posterior part of the corpus striatum, was a rounded mass, about the size of a large marble, and of a delicate, bluish-pink colour, very similar in appearance and consistence to the grey matter of the convolutions when congested. Over its surface numerous large blood-vessels could be traced, and the brain-substance in connection with it looked as if it had a thin membrane on its surface. The tumour projected into and across the third ventricle, causing a slight depression in the wall of the right optic thalamus. A slightly smaller mass, of precisely similar character, was found in the crus of the right hemisphere; but hæmorrhage had taken place around it, especially around its anterior portion. The hæmorrhage was small in amount, and had not broken down the brain-substance, but formed a thin layer of quite recently effused blood between the morbid mass and the brain-substance. No deposit of any kind was met with in any of the other organs of the body, which presented nothing worthy of note.

Dr. Church, 18*th of February*, 1868.

Report by the Committee on Morbid Growths on Dr. Church's specimen of morbid deposit in the brain.—The specimen referred to the Committee consists of a portion of the central parts of the brain on the left side and a portion of the crus cerebri from the right side. The examination was chiefly made upon the former, which was in the better state of preservation. Imbedded in the substance of the upper and inner part of the left optic thalamus is a firm, well-defined mass, of an oval shape, and deeply pigmented, measuring, on section, about four-tenths of an inch in length, and a quarter of an inch in depth. It is distinctly circumscribed, and can be enucleated from its bed by a very gentle pressure, leaving a depression in the brain-substance apparently lined by a delicate membrane. The mass itself is also enclosed in a fine capsule. The portions of the optic thalamus forming this cup-like depression are more deeply tinged than the adjacent parts.

On microscopic examination of this discoloured part, numerous cells are found, having a rounded outline and a single distinct nucleus.

They measure $\frac{1}{1200}$ inch in diameter, and the nuclei measure $\frac{1}{3000}$ inch. They bear a strong resemblance to the ordinary nerve-cells found in the grey matter of the cerebrum. In some parts the structure is less distinct, but no evidence of any new formation can be detected in the adjacent cerebral substance.

The mass itself appears to consist in parts of closely packed blood-corpuscles, much shrunken and withered, but still presenting unmistakeable evidence of their true nature. They measure from $\frac{1}{1500}$ to $\frac{1}{4500}$ inch in diameter, their small size being probably due to the contraction caused by the action of the spirit in which the specimen had been preserved. In other parts, no blood-corpuscles could be detected, the structure apparently consisting of an ill-defined granular substance, tending to break up and form conglomerates. Scattered amongst the corpuscles and the granular matter are numerous pigment-masses, of irregular form and distribution. No crystals could be detected.

The mass situated in the crus cerebri presented similar characters to that above described, but was less perfectly defined at the circumference. It appears, therefore, that the masses really consist of clots of blood, which have been more or less confined within a limiting membrane, probably derived from the pia mater; and it is possible that they consist of remains of blood extravasated at different times, as indicated by the degree to which it has been affected by secondary changes.

17*th of March*, 1868.

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10. *Softening of the chief part of the left cerebral hemisphere in connection with plugging of the left internal carotid artery; peculiar tunnelling, or canaliculated state of the arterial plug. Remarkable odour of the body before death.*

T. B., aged 52, a house-painter, was admitted into St. George's Hospital, under Dr. Ogle's care, on the 2nd of October, 1867. He had the "blue lead-line" on the gums, and had been the subject of several attacks of colic. He was pale in the face, and rather bloated-looking, and it was said that he had had pain in the right arm and inability to move it freely for one week. He had never had rheumatic fever or rheumatism, and had never had anything like a "fit" of any kind. When admitted, he was stupid and heavy, very slow in articulation, and half imbecile in appearance. The pupils were equal, and there was no apparent want of muscular balance in the features. He was quite unable to move

the right arm. It was observed that there was a very pungent smell about the patient, of a fox or mouse-like character, which was sometimes so strong that an approach to within several feet of the bed was almost unbearable; this continued in spite of all efforts to keep the body clean, such as baths, ablutions, etc., and was evidently not owing to any incontinence of urine or faeces. Two days after his admission he had a fit and became quite unconscious, and afterwards the whole of the right side of the body remained hemiplegic until his death, which occurred on the 11th of October. The urine was found to be albuminous.

Post-mortem examination.—Cranium. The scalp and cranial bones were natural, as also the cerebral membranes; but almost the whole of the central parts of the left cerebral hemisphere were broken down into a pulp extending as far inwards as the outer part of the optic thalamus and corpus striatum, and downwards almost to the base of the brain. The other parts of the brain presented nothing worthy of notice. On examining the vessels at the base of the brain, the left internal carotid artery, immediately before its division into its terminal branches, was found to be blocked up by a plug of firm fibrinous material, closely adherent to the walls of the vessel. On opening the vessel, this plug was found to be tunnelled or perforated by a fine canal through its centre, capable of allowing a pig's bristle to pass, but not of greater calibre.

Thorax. The lungs were natural. The heart also was natural as to its walls and cavities; but on the auricular surface of the mitral valve-flaps were situated numbers of small fibrinous deposits or granulations, which were very adherent to the endocardium, and evidently of old standing.

Abdomen. The kidneys were in an early state of granular degeneration. The other organs were natural.*

Remarks.—It would appear that in this case we have an instance of embolism, the occluding deposit in the carotid artery being most probably due at the onset to the removal of fibrinous material from the heart's valves, and its transport along the vessels, leading eventually to extensive atrophic softening of the brain-substance and consequent hemiplegia. The perforation of the obstructing plug is peculiar, and worthy of notice, and in connection therewith Dr. Ogle referred to specimens which had been described by himself and others, show-

* See Hospital Post-mortem Book, 1867, fol. 254.

ing a similar condition. Dr. Ogle also laid stress on the remarkable odour emitted from the body, and noticed that he had gathered from communication with several medical friends connected with asylums for the insane, that such cases were not unfrequently observed by them, though in general hospitals they are very rarely encountered. He instanced a case which had been related to him, in which the patient, a carpenter, suffered so constantly and so much from an offensive odour of the body which he could not remove by any possible means, that he was excluded from society by his fellow-workers; in his case the smell ceased to exist after he married. This smell of the the body has been described as the "rat-trap" smell by some authorities.* Dr. John W. Ogle, 18*th of February*, 1868.

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11. *Case of inflammatory growth filling the sinuses of the dura mater.*

This specimen was taken from a man who was admitted into Guy's Hospital for symptoms resembling delirum tremens, together with signs of disease about the cranium, including great swelling, especially near the ear. The swelling was remarkably brawny, and did not fluctuate. For some days before he died, the eyeballs protruded remarkably, and were curiously reddened from the distension of the conjunctival vessels. He became comatose gradually, but a few hours before he died he was believed by his friend to have recognized him.

On inspection, the cranium and the parts covering it were in a remarkable state. The scalp was indurated; and beneath it, in and about the pericranium, was a soft vascular fleshy substance, about two lines thick in some parts, but in others much less in thickness. This substance covered three-fifths of the calvaria about the vertex, extending towards the ears. The temporal muscles were pale, and their interstitial connective tissue increased to an amount equal to that of the muscular substance. The diseased part of the bone had a worm-eaten look, being eroded so as to show large pores; at one part there were signs of a separation of a layer from the surface, and the whole disease of the bone was bounded by a line of demarcation in the shape of a

* Since communicating the above case, Dr. Ogle had seen a child along with Mr. Taplin, of George Street, Portman Square, suffering from strumous meningitis, in whom a similar smell of the body existed.

groove or marginal channel. The erosions were filled with the fleshy substance described as beneath the pericranium; the appearance being as though this firm substance had eaten its way into the osseous tissue by pressure and absorption. There was no sign of caries, no softening or suppuration, nor was there any sign of syphilitic gummata either here or elsewhere; the appearance was more suggestive of a tumour, but the tendency to the formation of a sequestrum in the bone, the sharply grooved edge, and, above all, the formation of pus in the interior of some of the cranial sinuses negatived such a view of its nature. The interior of the calvaria showed nothing unusual, except that the parietal and occipital veins that enter the sinuses were like little fleshy cords. The dura mater was easily separated from the bone, and externally showed nothing remarkable; neither internally did its surface appear unusual. It was only on feeling the sinuses that their remarkable state was found out; they felt as thick and solid as one's finger. Such a state suggested that we should find them full of *ante-mortem* clot; but, on attempting to open the longitudinal sinuses, no channel could at first be found. Transverse sections showed the sinuses to be thickened with exactly the same kind of vascular material as that outside the cranium; minute vessels in the fleshy matter could be easily seen. In the widest parts of the longitudinal and lateral sinuses, a probe could scarcely be got to pass; and when the sinus was squeezed, only a drop of pus-like liquid exuded. Following the petrosal and cavernous sinuses, there was found to be thickening of their walls, but their channels were occupied by what appeared to be laudable pus, in which no admixture of blood was present.

I have placed under the microscope some sections across the lateral sinuses, which show the structure of the substance that thickens them. This has the character of organizing granulations. In it can be seen the two small passages that represent the channel of the sinus, which has been divided. There was an unusual fulness of the veins of the brain. The membranes of the brain and cord showed an acute meningitis.

It appears impossible that the life of the brain could have been maintained for a sufficient length of time to allow of the formation of pure pus-like matter in the blood-channel of the sinuses, seeing that the sinuses form the only channels of returning circulation from the brain. The extreme vascularity of the conjunctiva shows the way in which the blood of the ophthalmic vein came to the veins of the face, instead of going, as usual, to the cavernous sinuses. The veins of the cervical spine were not enlarged, and I could find no way in

which the blood of the cerebral veins returned, except along the narrowed channels of the longitudinal and lateral sinuses. Yet these were occupied by a pus-like liquid, which was at most a little purplish. The difficulty is to understand how the circulation could have gone on in the sinuses, while this pus was present; or could it be that abscesses in the sinus-wall had discharged into the sinuses at the last moment, and so caused death, leaving the pus in the channel? No abscesses could, however, be found; the only approach to a suppuration was a yellow opacity of parts of the inflammatory substance in the sinuses, which yellow opacity the microscope showed to be due to a fatty degeneration of the corpuscular elements composing the new formation in their walls. I should add that the internal jugular veins were found almost obliterated by swelling of their wall for one inch and a half below the skull; no clot was present in them. Dr. Moxon, 17*th of March*, 1868.

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12. *Myeloid tumour of the brain.*

A. G., aged 31, a tall, strong-looking man, a bricklayer, presented himself as an out-patient at the Tunbridge-Wells Infirmary, about two years ago, since which time he has been for varying periods, under my treatment for epilepsy. When six years of age, a heavy door fell upon his head edge-wise, the blow being at the vertex, a little to the right of the mesial line. The scalp over a large space was detached, and he was instantly rendered insensible. For six weeks he lay in an unconscious state, but at length recovered. Throughout the years of his boyhood, he was exceedingly irritable and irascible, and this peculiarity his parents attributed to the injury sustained on his head. He often complained of headache and shooting pains in the head; and when he became a man, these pains were produced by trifling causes of excitement, and were often severe. He was of temperate habits, and small quantities of stimulants readily excited him. He married, and pursued his occupation for several years without any marked inconvenience from the head-symptoms before described. He had never had any illness since the accident.

In September, 1864 (when 28 years of age, and twenty-two years after the injury), he fell down suddenly in a strongly marked fit of epilepsy. Seizures of the same kind came on once in three or four weeks for a twelvemonth. During the following year he was much

more free from the fits; but a partial loss of memory and a feeling of general debility rendered him unequal to the resumption of his employment. When under my care, he was chiefly treated with the bromide of potassium, which he took in large doses, and for a considerable period. For a time this remedy seemed to produce benefit, but the relief was only of temporary duration.

In May, 1867, he had the last epileptic fit. I may here observe that since the first fit in September, 1864, he sometimes, with much suddenness, lost motor power in the left arm and leg. This loss of action would continue for two or three hours, when the voluntary muscles gradually regained their functions. He never had any anæsthesia nor any facial paralysis. The pains in the head had always been referred to the place where he had received the blow.

On the 12th of October, towards evening, he began to be dull and sleepy, and these symptoms were soon followed by an attack of vomiting. On being roused, he complained of pains in the neck and back. He then lapsed into unconsciousness, and died on the following morning, at seven o'clock.

On examination of the head, sixty hours after death, there was no morbid adhesion of the scalp. On attempting to remove the calvaria, the dura mater was strongly attached to the upper part of the right parietal bone, and at the place of attachment a small osseous mammillated projection, of the size of a horse-bean, was discovered. The brother, who was present at the autopsy, said that this was the precise spot where the blow had been received. The dura mater, arachnoid, and pia mater were there firmly united, and, over a considerable space, thick and opaque. On the removal of the encephalic mass, a tumour, of the size of a small Chinese orange, was found in the right hemisphere, and under the osseous tuberculated nodule. The convoluted substance had been thinned, and at one part abolished. The surrounding cerebral tissues were of soft consistence. On a section being made of the tumour, it exhibited a firm, uniform, smooth, succulent, shining surface, and was of a yellowish-white colour. It did not break down under the fingers, like medullary cancer, but had a more resisting and fibrous texture. It was enveloped in a delicate semi-transparent membrane. Under the microscope were seen oval, lanceolate, or elongated, caudate cells, nucleolated cells, free nuclei, and shining molecular fatty matter; also some minute vessels, of an orange tint, which had evidently undergone fatty decay. The characteristics of this growth very closely resembled the description given of the myeloid tumour by Mr. Paget.

He and other authorities assert that these fibro-plastic or myeloid formations sometimes are of very slow development, and it is exceedingly probable that such was the case in this instance. From the history of the case, and from the facts that the man's disposition became altered by the accident, that he always afterwards complained of pain at this spot, that lesions of the membranes directly beneath the seat of injury were discovered, and that the tumour occupied the portion of the right hemisphere, in immediate apposition to the place where so much organic disease had, at a remote date, been set up, it would seem but a rational inference that the morbid growth was primarily attributable to the blow. Dr. WARDELL, 17*th of March*, 1868.

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13. *Cancerous? (spindle-cell sarcoma) tumours of brain, succeeding a similar tumour of the tibia.*

I am indebted to Mr. Allwork, of Maidstone, for the outline of the symptoms which ushered in the fatal termination of this case, and for the hemisphere of the brain now exhibited to the Society. The narrative of the patient's history and primary disease is described in the *Transactions* of the Society, Vol. XVIII., page 215. She perfectly recovered from the amputation (performed on the 20th of February, 1867), and regained her health and flesh.

On the 12th of February, 1868, she was suddenly seized with acute pain of a neuralgic character, apparently in the phrenic nerve. This was no sooner relieved by treatment, than it appeared in another nerve, viz., the sciatic, and then in the supra-orbital branch of the fifth, in the latter severely for a fortnight, in spite of all treatment. Some diseased teeth were now removed from the upper jaw on the left side, with great relief. Shortly after, paralysis of the right arm occurred, quickly followed by dysphagia and loss of control over the bladder and rectum. Coma and death on the 23rd of March.

Mr. Allwork found extensive disease in both hemispheres of the brain and several tumours, varying in size, but all of the same character, in different parts of the organ. One of the largest was embedded in the pons.

Those I examined were more or less of a spherical form, varying from one half to three quarters of an inch in diameter. They were situated on the surface, in which they were embedded, but were capable of easy enucleation, and presented a smooth and even surface; they were not

lobulated. They appeared to have been developed in the pia mater, dipping in between the convolutions, and being firmly connected with that membrane, which was likewise expanded over their surface, and retained them *in situ*. A circumscribed tumour, presenting all the foregoing characters, rather more than an inch in diameter, and having a highly vascular membranous capsule, was found in the centre of the left hemisphere.

In substance, these tumours were considerably harder than healthy brain. The brain-substance immediately surrounding them appeared somewhat softened, but there were no appearances of surrounding vascularity; and as the section was not made until some days after death, the brain meanwhile having been in spirit, it was impossible to say whether this softening was a *post-mortem* result.

Mr. T. Carr Jackson, 21*st of April*, 1868.

Report of the Committee on Morbid Growths upon the secondary tumours in the brain, from Mr. C. Jackson's spindle-cell sarcoma of tibia.—A careful examination of these tumours shows that they have been evolved out of the pia mater. Their fine structure essentially agrees with that of the tumour of the leg described and figured by the Committee on Morbid Growths in the last volume of the *Transactions* (Vol. XVIII., page, 216), the principal difference being the predominance of round and roundly oval cell forms over the spindle shapes, the reduction of the inter-cellular substance to a minimum, and a more active cell-multiplication.

This case furnishes us with an example of discontinuous infection, associated with a primary tumour possessing the fine structure of a sarcoma, but clinically malignant as a true cancer.

5th of May, 1868.

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14. *Chronic meningitis in a case of syphilitic (?) disease of the bones of the skull.*

The patient from whom this specimen was taken was a man, aged 56, who was admitted into St. George's Hospital on the 19th of March, 1868.

The history that was obtained after death from his wife was that he had been married thirty-three years, and that during that time he had never had any serious illness; but that for the last ten years he had been subject to outbursts of temper, and that when annoyed he had been

very violent. He was accustomed to drink largely, and latterly had been living badly. No history of syphilis could be obtained. The day before his admission he was attacked with violent headache, and upon admission he complained of great pain in his head and sore throat: he did not present, however, any urgent symptoms, and the case was regarded as a very trivial one. In the evening of the same day he became suddenly comatose, with symptoms resembling those of uræmic poisoning. The urine was high-coloured and albuminous, with coarse, granular casts. He died quietly the next morning.

Upon examination of the body after death, the calvaria was found to be much thickened, especially at the back part, and to present a porous and worm-eaten appearance. All over the surface of the brain, but especially over the left hemisphere, was a uniform and diffused layer of solidified lymph, of a greenish colour; the lymph was situated beneath the visceral arachnoid, and formed a layer at least a quarter of an inch in thickness all over the surface of the brain, so that the cineritious matter was quite hidden from view. The effusion extended over the sides of the hemisphere and to a slight extent over the base; the velum interpositum also contained a small amount in its meshes. The layer could be easily raised and peeled off, leaving the surface of the brain perfectly smooth. With the exception of commencing granular degeneration of the kidney, the other organs of the body were natural.

The interest in the case is that there should have been so great an amount of disease with an almost entire absence of symptoms. From the condition of the effusion, it is quite evident that it must have existed there for some time, and that it did not come on at the time he became comatose, or even when attacked with pain in the head, the day but one before his death. The disease appears to have begun in the bone, and was, in all probability, syphilitic in its origin, though no history of syphilis could be obtained from his wife: he was known, however, to have led a dissolute life, and from the appearance of the skull there is little reason to doubt its syphilitic nature.

Mr. J. P. Pick, *5th of May*, 1868.

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15. *Condition of nerve-trunks and other parts, in a case of anæsthetic leprosy.*

The following case, although imperfectly recorded in one important point, is of interest, because there have been only two instances of this

disease hitherto brought before the Society, and in one of these the condition of the nerve-trunks had not been ascertained. In the other case, changes very similar to those found in the present instance were described by Dr. Carter. It is much to be regretted that, by an unfortunate oversight, the spinal cord was practically lost, as its remains seemed to indicate such an irregularly atrophied condition as is described by Danielssen and Boeck, while the brachial and lumbar plexuses —which these observers have often found singularly wasted—were enlarged and diseased, as in Carter's cases.

Case.—George H., aged 39, born of healthy parents in Ireland, went to Trinidad as an engineer when aged 19, and lived there for fifteen years in a very unhealthy district, where leprosy in more than one form was common amongst the natives. He suffered from "fever and ague," typhus and dysentery, with a skin eruption which broke out amongst the people, and which he called ring-worm. Under this combination of maladies he nearly sank, and a year after his recovery, *i.e.*, nine years ago, he noticed the first symptom of the present affection in a contraction of muscles of left calf, so that the heel was constantly raised in walking; shortly afterwards he lost all sensation in left ring and little fingers. Three years later he observed that his skin was yellow and shrivelled, his limbs wasted, and that ulcers began to form on balls of little toes, and, after some months, skin of face became lumpy and yellow, with scattered white scales upon it, his eye-lashes, eye-brows, and moustaches falling out. Sores remained obstinate on feet, but were "not so sensitive as ordinary ulcers." In this condition he returned from the West Indies in 1864, and placed himself under medical care in Dublin, but with no improvement. Early in 1865, the skin began to ulcerate about fingers and toes, the nails to crack and fall off, and the ends of the fingers and toes to be consumed by the spreading ulceration. This ulceration of fingers and toes was always more or less sensitive. As the disease progressed, sores formed on nose and lips, and his general health declined. During nearly the whole of his illness he had suffered much from darting, burning pains in feet and legs, worse during the night; while in Trinidad, he had had frequent sexual intercourse, but the desire had passed away during the last few years. For last five or six years he had suffered from attacks of intermittent hæmaturia, occuring half a dozen times in the year, from no apparent cause, and lasting two or three days at a time. Had gonorrhœa twice or thrice, but denied syphilis. His food had consisted mainly of salt-fish and vegetables, with occasionally a little salt-meat.

When admitted into the Middlesex Hospital, under the care of Mr. De Morgan, he was extremely weak and emaciated. Skin over whole of body yellow and shrunken, and lying loose and wrinkled, like parchment. All nails of fingers and toes gone, the exposed bed of the nail being the seat of but slightly sensitive ulceration. Some numbness of hands, with a few thick whitish scabs on backs and inner sides of palms. Hair on scalp, coarse, dry, grey-brown; no eye-brows nor lashes, and only a few scattered remains of moustache and beard. Skin of face, yellow, dry, and mottled with large, livid, smooth patches. Ears, large and ugly, with irregular thickening of skin over pinna, and a few scattered scabs. Nose flattened, the lower part spread out, and covered with thick yellow-white scabs. Lips also thickly scabbed. Hoarse, whispering voice. He gradually sank, death being preceded some hours by a slight convulsion.

At the *post-mortem* examination, the following appearances were observed. Cellular tissue generally dropsical. Muscles very pale. Enlarged glands below right groin much pigmented, so as to resemble a supra-renal capsule on section. Pleuræ free from adhesions; right cavity containing eighteen ounces, and left seven ounces of clear fluid. Both lungs somewhat wasted and congested, but free from any trace of tubercle; some dilatation of bronchial tubes. Muscular substance of heart very pale and unusually translucent, but giving no reaction with iodine, etc. Valves normal, save very considerable thickening of the chordæ tendineæ of anterior flap of mitral. Peritoneal cavity distended with clear fluid; no adhesions, but here and there, notably on under surface of diaphragm on left side, there were bright red clustered hæmorrhagic spots. Liver weighed sixty-seven ounces and a half, was tough and roughly nodulated, and had enlarged veins ramifying on its upper surface. Section showed ordinary characters of cirrhosis, both to the naked eye and under the microscope: increase of fibrous part, with a mottled yellow appearance, as of compressed lobules the seat of fatty change. Spleen was enormously enlarged (weighing fifty ounces), apparently from simple hypertrophy; very firm and dark-red on section, mottled with purple patches; capsule irregularly thickened, and at one point, near the surface, was a pyramidal, pale-yellow, firm mass (old infarctus?); it had not the appearance of amyloid change. One or two small spleniculi. Pancreas and supra-renal capsules seemed normal. Kidneys perfectly healthy-looking. Stomach and intestines normal throughout, and nearly empty. Brain-membranes quite healthy looking; substance rather pale and soft, but not notably diseased in any way. It was not

examined under the microscope. There was a small recent clot in the substance of the left hemisphere, near to the grey matter of the upper surface. The vessels were not appreciably diseased. The spinal cord was unfortunately not removed until too far spoiled to be available for microscopic examination. A careful dissection was made of the nerve-trunks of the limbs. Although in many parts the nerve was obviously increased in size, occasionally very notably so, at only one spot—in the right ulnar nerve, at the bend of the elbow—was distinct fusiform enlargement noticed. The "starting up of the funiculi from the surface of a transverse section of the enlarged nerve," described by Carter,* was well seen in cutting across the right posterior tibial. The difficulty of making microscopic sections sufficiently thin for examination with high powers compels one to speak guardedly of these appearances; so far, however, as I am able to judge, after a careful study of many sections, the changes in this case seem to confirm the views published by Dr. H. V. Carter, in the thirteenth volume of this Society's *Transactions*, (p. 13.) The accompanying figures will explain these changes better than any written description. (See Plate III., figs. 1, 2, and 3.) There is very evident increase of the connective tissue surrounding the funiculi, as well as ramifying in their substance and separating the nerve-tubules. So shrunken and altered are these latter, that with a low power (and indeed, at first sight, with higher powers also), they resemble minute dark nuclei, contained in delicate oval cells.

The point about which careful observation is most needed, in the present state of our knowledge of the pathology of this disease, is the condition of the spinal cord. In sixteen cases recorded by Dr. Carter, the cord and membranes are said to have been unaffected, a statement singularly at variance with the observations of Danielssen and Boeck. These pathologists have always found the cord and membranes more or less diseased, very markedly so at times: thus, "En général, elle a perdu un peu de son volume; elle est à présent plus mince; elle peut même être atrophiée au point de n'être pas plus grosse qu'un canon de plume, mais elle n'en conserve pas moins sa fermeté primitive."† With reference to this special point, it may be mentioned that in the present case, although the cord was too soft—almost diffluent, indeed—for careful examination, yet remarkable constrictions were seen in many parts of its extent, producing almost a beaded appearance, as in a

* Trans. Medical and Physical Society of Bombay. No. 8., new series, 1862.

† Traité de la Spédalskhed, ou Éléphantiasis des Grecs, par D. C. Danielssen et W. Boeck, p. 285.—French Translation.

DESCRIPTION OF PLATE III.

Figs. 1, 2, and 3 illustrate Mr. Henry Arnott's Case of Anæsthetic Leprosy, described at p. 35. The figures are copied from drawings by Mr. Arnott.

Fig. 1. Transverse section of healthy median nerve at elbow. A single funiculus seen in which the divided nerve-tubules appear as small bright spots or circles parcelled out into groups by delicate interlacing areolar tissue. Magnified 40 diameters.

Fig. 2. Transverse section of median nerve enlarged in a case of anæsthetic leprosy. A single funiculus seen much paler and more translucent than in health, and increased in size, and the intersecting areolar tissue seen with greater distinctness. The paler portion seems at first sight to be made up of delicate oval and round cells, containing generally a single dark nucleus. But these are probably interspaces between the neurilemma filled with a clear refractile material, in the midst of which the compressed and shrunken nerve-tubules lie, as described by Dr. H. V. Carter, of Bombay. The dark points represent the few remaining unaltered nerve-tubules. Magnified 40 diameters.

Fig. 3 is the portion of the specimen represented in fig. 2*a*, magnified 400 diameters, and showing the cell-like appearance described above. At *a* is an apparently unaltered nerve-tubule.

Fig. 4 illustrates Dr. Cayley's Case of Cancer of the Anterior Mediastinum involving the Pneumogastric Nerve, described at p. 53. The nerve-tubes are seen separated and surrounded by cancer-cells and nuclei. From a drawing by Mr. Lens Aldous. Magnified 220 diameters.

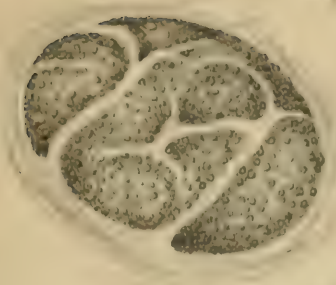
a. Nerve-tubes.

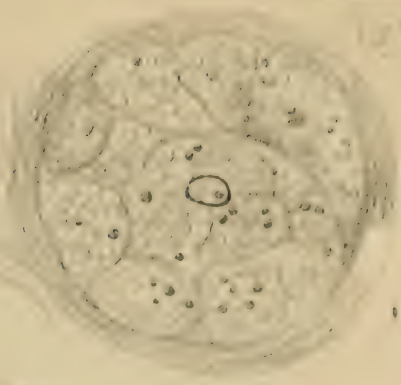
b. Cancer-cells and nuclei.

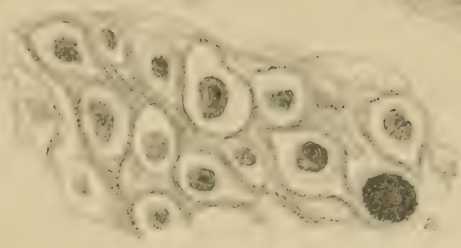
Figs. 5 and 6 illustrate the Report of the Committee on Morbid Growths on Mr. Henry Arnott's case of Adenoid Growth of the Rectum. From drawings by Dr. J. Burdon Sanderson (p. 218).

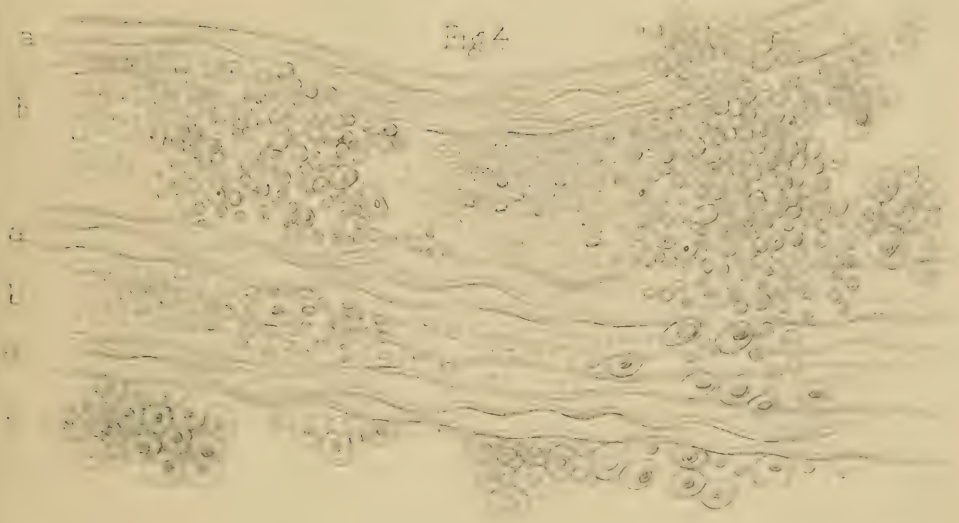
Fig. 5. The fibrous stroma as seen with ½-inch object-glass.

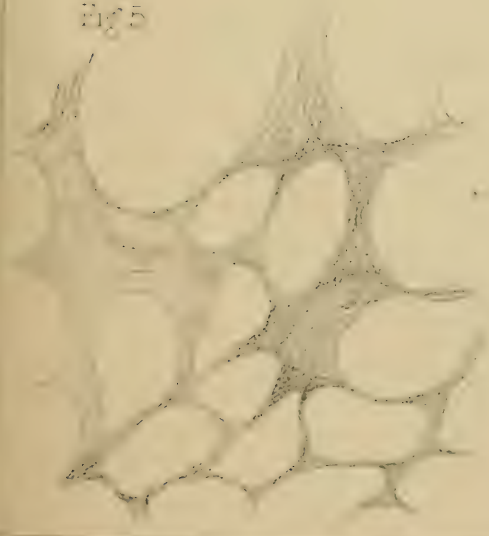
Fig. 6. The glandular epithelium imbedded in the meshes of the fibrous stroma. The latter is seen to consist of delicate fibres with oval or filiform nuclei. The drawing is taken from the specimen as viewed with ⅛-inch object-glass.











varicose vein. How far this change was due to *post-mortem* decay, it is impossible to say; but the fact is recorded, as it so curiously agrees with the observations referred to. The foot of this patient, with one or two of the diseased nerves, is now in the museum of the Middlesex Hospital. Mr. Henry Arnott, *19th of May*, 1868.

II.—DISEASES, ETC., OF THE ORGANS OF RESPIRATION.

1. *Gunshot injury of the chest.*

The following case occurred under the care of Mr. Erichsen, to whom I am indebted for permission to exhibit the specimens.

The history of the case excited much public interest, in consequence of the semi-political character of the assassination. Edwin McDonnell, a bandsman in the Guards, aged 23, was admitted into University College Hospital, in consequence of having been shot in the chest by a supposed Fenian. A small circular wound was found close to the right edge of the sternum, below the fifth costal cartilage; and a corresponding wound was also found at the back of his chest, on the same side, immediately below the inferior angle of the scapula: this wound was slightly larger than the one in front where the bullet had entered, which measured about one-third of an inch. On removing the clothes, which were perforated in front, but only stained behind, a small conical bullet was discovered.

On examination, it was found that the bullet had penetrated the chest, and had not passed merely beneath the skin,—a fact which was verified by the escape of air from the anterior wound, on gently passing a probe into it. The injured side was resonant on percussion; the breath-sounds were weak. A pad of lint was placed over each orifice, and a broad strip of strapping applied over the side. The patient was kept upon a low diet. At first he did well; but on the second day symptoms of pneumonia commenced, attended with increased rapidity of respiration. The upper part of the chest was tympanitic; the lower and posterior parts were dull. The respiration above the fourth rib was bronchial; below, it was very weak and distant. A small quantity of dark bloody viscid matter was expectorated. No emphysema of the cellular tissue, either in front or behind, could be detected. After this, some slight improvement took place, without, however, any

important change occurring in the physical signs; but the patient subsequently showed signs of exhaustion, and died on the seventh day.

The *post-mortem* examination was made twenty-four hours after death. The body was seen to be greatly changed, in consequence of the cellular tissue having become greatly emphysematous. The anterior portion of the chest-wall having been removed, the cavity of the right pleura was found to contain three pints of a dark bloody fluid, evidently consisting of a mixture of blood and serum, in which flakes of lymph and a few clots of blood were found floating. The surface of the pleura was covered with a soft spongy layer of fibrine, and adhesions had formed in several places.

On tracing the path of the bullet, it was found to have perforated the anterior wall of the thorax, below the cartilage of the fifth rib, and close to the right border of the sternum; and, after passing through the base of the right lung, to have made its exit through the fifth intercostal space, external to the angle of the scapula. The rib was not broken, but only bruised at the aperture of exit. The pulmonary substance surrounding the track of the bullet was condensed and airless, in consequence of the hæmorrhage which had taken place into the tissues.

The aperture of entry, when carefully examined, was found to present a valvular appearance, in consequence of the bullet having passed obliquely through the wall, and thus having pushed the pleura before it, without at first rupturing the membrane. Very gentle pressure applied on the inner side was sufficient to occlude this opening, which was still further closed by the deposit of a layer of inflammatory lymph upon the surface. The aperture of exit was more direct and more ragged; but as the patient lay in the recumbent position, this opening was completely closed by the pressure of the partially collapsed lung, and by the accumulation of fluid in the pleural cavity. These two circumstances go far towards explaining the complete absence of emphysema during the progress of the case, although the physical signs showed the existence of pneumo-thorax to a notable degree. The remarkable absence of hæmoptysis is a point of more importance in the case, and may possibly be explained by the fact, that no bronchial tube of any considerable size had been divided by the bullet, and that from the direction of the wound only a small portion of the posterior part of the lower lobe of the lung had been implicated. Another point of interest in the case was the absence of discolouration in the lower dorsal and lumbar regions,—a condition which is unsually described as resulting from a train of circumstances

similar to those exhibited in the present instance. The only suggestion which presents itself to my mind to explain this apparent anomaly is that the track of the bullet through the thick layer of dorsal muscles was not patent, but that it was speedily closed by contraction of the fibres, and that the pressure which was applied to the external wound assisted in preventing the escape of bloody fluid from the cavity of the pleura. It may be doubted whether this complete retention of the bloody and serous fluid in the cavity of the pleura, which resulted from the character of the external opening, was advantageous or the reverse. Some consider that in these cases the pressure thus exercised upon the lung serves to arrest any further hæmorrhage; whilst others, amongst whom are the American and Prussian military surgeons, whose large experience entitles their opinion to respect, are opposed to this practice, and even advocate the plan of puncturing the chest-wall or of enlarging the original wounds, for the purpose of allowing a free passage for the escape of all fluids that may collect within the cavity.

Mr. Alexander Bruce, *15th of October*, 1867.

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2. *Congenital malformation of the chest.*

The patient, John C., who was brought before the Society, was a delicate boy, aged 6, who for the last three years had been under Mr. Smith's observation. There was a hole in the bony wall of the thorax, on the left side, extending from the sternum into the axilla, and from the clavicle to below the nipple. The part where the ribs were deficient measured about three inches across from side to side, and the same from above downwards. The skin was quite natural over the part; the pectoralis major muscle was but very slightly developed; parts of the second, third, and fourth ribs were deficient; the sternal ends and cartilages were entirely absent. Towards the axilla, the ends of these ribs were to be felt sharply defined, as if cut off. The lungs bulged freely through this hole in the framework of the chest; the movements of the heart were plainly to be seen, and the heart itself could be touched and almost grasped when the boy lay down on his left side.

The child had always been delicate, and had been under Mr. Smith on account of prolapsus ani and general debility, and lately he had been an inmate of the Children's Hospital, on account of a slight attack of bronchitis.

Physical examination of chest of John C., by John Williams, M.B. —In ordinary respiration, the chest-wall, where the ribs are deficient, sinks in slightly with inspiration, and is slightly pushed out during expiration. This is very marked in forced inspiration and expiration, as well as in coughing and blowing.

The percussion-note is somewhat higher pitched from the clavicle down to the lower edge of the deformity than it is over the corresponding region on the opposite side. Over the rest of the chest it is of normal quality. The respiration from the clavicle down to the lower edge of the deformity is loud, harsh, and blowing; as we approach the axillary part of the deformity, these characters, though present, are less marked. At the lower anterior angle of the deficiency, a crackling sound is heard, but only when firm pressure is made with the stethoscope. Vocal resonance is slightly increased, and vocal fremitus markedly so over the deformed region. The heart's apex beats in the lower anterior angle of this region, on a level with, and close inside, the nipple; but the heart's impulse is felt along the anterior edge of the deficiency, as well as in the lower angle. On deep inspiration, the impulse cannot be felt in the situation named, but may be felt in the interspace below. When the boy lies on his left side, a feeling of movement from left to right is conveyed to the finger of the observer by the impulse of the heart. The heart's sounds are louder over the anterior part of the space than over the normally formed chest-walls bounding it; and on firm pressure with the stethoscope over the upper anterior angle of the space a very faint systolic murmur may be heard. During examination the boy was lying down.

Mr. Thomas Smith, *15th of October*, 1867.

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3. *Warty growth upon the vocal cords.*

A widow, aged 47, was under treatment in St. Thomas's Hospital for regurgitant disease of the aortic valves, with all the usual symptoms of advanced heart-disease, complicated with those of ascites, for which latter affection she had to be tapped on two occasions. The last tapping, which was done at some risk, but saved her from impending death, was performed upon the seventeenth day before death occurred. The wound, however, did not heal, and latterly suppuration of the peritoneal surface took place.

While in the hospital, her voice was noticed to have invariably a

peculiarly rough, squeaking character, not very much removed from a hoarse whisper. The idea suggested itself, that the affection of the voice might be due to the pressure of an aneurysm; but there were no other symptoms of aneurysm, there was no local evidence of the pressure of any such tumour, and, moreover, the affection of the voice had certainly existed for a great length of time. She was under my care during the last three or four weeks only of her stay in the hospital, and throughout the whole of that time she suffered from no laryngeal or tracheal impediment to breathing; but, at the same time, she was so ill in other respects as to render all, except absolutely essential, interference inexpedient. Hence no examination of her throat with the laryngoscope was made. She died on the 11th of October, 1867.

Post-mortem examination.—There was much œdema of the lower extremities. The pericardium contained a little serum, and presented a small diverticulum, about an inch and a half long. The heart weighed seventeen ounces. The aortic valves were contracted and thickened, and one of them was slightly everted. The mitral orifice was a little contracted. There was a little cretaceous deposit about the free edge of the valve, and some thickening of the chordæ tendineæ. The aorta was atheromatous. Both pleuræ contained a large quantity of serum. There were cretaceous nodules in the apices of both lungs, and there was a consolidated patch, as large as a walnut, at the base of the right lung. The peritoneal cavity contained a large quantity of yellow, somewhat offensive, puriform fluid; the surface was congested, and the intestines were glued together with lymph. The abdominal organs were tolerably healthy. The larynx and trachea were healthy, with the exception that there were found connected with the margins of the rima glottidis a collection of small villous outgrowths. One of these sprang from the posterior angle of the right laryngeal sinus, and a very small group was connected with the anterior half of the right true vocal cord. The true cord of the left side was much more extensively affected; a series of fringes sprang from it in nearly its whole length, and a mass considerably larger than that of the opposite side occupied the posterior angle of the corresponding sinus.

Dr. J. S. Bristowe, 15*th of October*, 1867.

1. *A case of cirrhosis of the lung, with some of the results of an analysis of thirty cases of this disease.*

The specimen I have to exhibit to-night shows an early stage of that condition of lung which was described by Sir Dominic Corrigan under the name of "Cirrhosis." It was taken from a man, aged 33, admitted into St. Mary's Hospital, under the care of Dr. Sibson. He was a bargeman, and died on the sixth day after admission. Only a few details were obtained concerning his history: he stated on admission, however, that he had had a cough "for years," though this had not troubled him very much, and that he had been comparatively well till two days ago, when he suddenly felt a chill, accompanied by great dyspnœa and headache. The man was somewhat emaciated, and there was flattening of the left side of the chest anteriorly, most notable in the infra-clavicular region. There was dulness also under the left clavicle and over the whole of the left front, whilst the percussion-sounds on the right side were natural. Over the whole of the left front, mucous and coarse crepitant râles with a few sibilant râles could be heard on auscultation; over the right side there were sibilant râles only. The sputa were composed of a tenacious mucus. The face and lips were purple. Pulse, quick and feeble, 100 per minute; respiration, 36 in the same time, whilst lying on the back. The dyspnœa and weakness gradually increased, and the man died on the sixth day after admission.

At the *post-mortem* examination it was found that the left lung was so firmly adherent around the upper part of the upper lobe, and farther down posteriorly, that it had to be cut out. The adhesions were due to the formation of a dense fibrous material, of almost cartilaginous consistence, growing outwards from the thickened pleura, which had acquired a thickness of nearly one inch in some parts. Proceeding inwards there were seen, on section, dense white ligamentous bands, consolidating almost the whole of the upper lobe of the lung, and intersecting its dark pigmented tissue in all directions, save where it was hollowed out in one or two places into smooth-walled cavities, about the size of a walnut, with semi-purulent contents. These had the appearance of being produced by dilated bronchi. The lower lobe was also slightly indurated by an increase in the thickness of its fibrous septa, but not notably so. No tubercle was found throughout this organ, either in the form of the grey granulation proper, or of cheesy products result-

ing from chronic lobular pneumonia. The right lung also was completely free from any appearance of tubercle; it was large, and presented only the evidences of acute bronchitis, being œdematous and much congested throughout. Not a particle of tubercle was found in any organ of the body. The right ventricle of the heart was decidedly enlarged, and the auricle was much distended with blood. The liver presented no notable morbid change. The spleen was firm and the kidneys slightly congested.

Remarks.—Cirrhosis of the lung is principally recognized as an independent disease of this organ, deserving a place in our nosologies, by the Dublin physicians. It has been contended by other British pathologists that no such distinct pathological condition exists, and that all the instances of the so-called cirrhosis of the lung are examples of tubercular phthisis in its later stages, when advancing towards a cure. Some few English physicians do, however, accept Corrigan's views, and recognize this as a distinct disease, rather than as any mere stage of tubercular phthisis. By the French physicians also, with the exception of M. Jaccoud, this morbid condition has received no distinct recognition. Cases which, I think, would be more fairly referred to this head have been described in France either under the head of "Dilated Bronchi," or of "Chronic Pneumonia." But it appeared from the researches of Lebert * and of Barth, † that by far the largest majority of cases of "Bronchiectasis," occurred in individuals who were over 60 years of age, whilst it would appear from an examination of the accompanying table of thirty cases of cirrhosis that this disease occurred in a very large proportion in individuals between the ages of 16 and 40 years. Dilatation of the bronchi is, in fact, rather an accidental addition than a necessary consequence of cirrhosis, as Corrigan imagined. It either did not occur at all, or was very slightly marked, in one-third of the cases which I have collected.

With regard to the so-called "Chronic Pneumonia" of Grisolle ‡ and Charcot, § it seems evident from the description of these authors that the pathological condition in question is in every way similar anatomically to the state of lung met with in the more chronic forms

* Anat. Patholog., T. I., p. 620.

† Mém. de la Soc. Méd. d'Observation de Paris, pp. 469—614.

‡ De la Pneumonie.

§ De la Pneumonie Chronique.

of cirrhosis; and it seems also obvious, from the results of their researches, that such a pathological condition may be the immediate sequence of an attack of acute sthenic pneumonia, and that in such cases the secondary cirrhotic change is exceedingly rapid in its evolution, so that in the course of three or four months after an ordinary attack of pneumonia, the whole of one lung may be found *post-mortem* completely indurated and traversed in all directions by white ligamentous trabeculæ of fibrous tissue.* This pathological condition is obviously no mere persistence of the old and original pneumonic state, to which the name chronic pneumonia would seem to be especially applicable; but it is rather due to the supervention of a pathological condition of a totally distinct nature. It is not a persistence of a condition in which infarction of the air-vesicles and minute bronchi is the characteristic morbid feature; but rather a new growth of fibrous tissue, extending in all directions from the walls of the vessels and the walls of the bronchi, so as ultimately to obliterate the true vesicular structure of the lung.† This, therefore, is an instance of an *acute fibroid* growth, leading to results in every way similar to those produced where the fibre-tissue is more slowly evolved, and where the condition which has been called cirrhosis is produced. In the one case we have an acute cirrhosis, and in others a chronic; but the former cannot strictly be called chronic pneumonia: it is a tissue-change, entirely distinct from that met with in any stage of acute pneumonia, and is an entirely new process, following rarely as a sequence of an acute sthenic pneumonia. This original disease, instead of subsiding, or persisting in a chronic state, apparently merely forms a favourable starting point, under the influence of conditions of which we know nothing, for the rapid evolution of an entirely new morbid process. Hence, in my opinion, the term chronic pneumonia is doubly inapplicable to such a pathological state.

With regard to the relations of cirrhosis to the more ordinary forms of pneumonic and tubercular phthisis, it seems to me that an examination of the cases, some of the details of which I have tabulated, goes to prove almost absolutely that there are certain forms of lung-disease characterized by a fibroid degeneration and induration of the lung-tissue pure and simple, and which have no necessary relationship

* See Charcot (*loc. cit.*).

† Therefore, if the old phraseology is to be retained, this process, instead of being spoken of as one of chronic pneumonia, should rather be considered as an instance of an *acute interstitial pneumonia*, supervening upon an attack of ordinary acute sthenic pneumonia. I think, however, there are good reasons for inducing us to do away with the name *interstitial pneumonia* altogether.

whatever either with pneumonia, or with tubercular phthisis. Whilst admitting, to the fullest extent possible, the frequency, the importance, and the variable amount of the fibroid induration met with in lungs undergoing the changes ordinarily seen in chronic phthisis—either in conjunction with chronic lobular pneumonia, or with tubercle—I think the evidence in our possession warrants us in believing that the fibre-change, pure and simple, unassociated with either of the other two morbid products, may invade the lung, and so induce another form of phthisis.

Of the thirty cases that I have collected, in only five was any trace of either chronic lobular pneumonia or of tubercle met with in either lung, and in each of these five the amount of such product was so small that it could only be regarded as an *accidental* complication, altogether insignificant in amount, when compared with the extent of new fibre-growth with which it was associated. And of these five cases, moreover, in only one case was the tubercle (or chronic lobular pneumonia?) found in the cirrhosed lung itself; and then, too, it was only a "*very small quantity*" of crude and softened tubercle which was said to exist at the apex.*

Time will not permit my entering more into detail,† and I must leave the Table to speak for itself, so far as it goes. A careful analysis of the particulars of the cases there referred to enables me to say as follows:—Cirrhosis of the lung is a rare disease, mostly of a chronic type, in which the individual has suffered, perhaps for many years, from cough and muco-purulent expectoration, with or without hæmoptysis; in which the wasting is not very marked, whilst the constitutional symptoms of the ordinary form of phthisis are almost absent. There is usually marked dulness and immobility or retraction of one side of the chest, with or without cavernous sounds on auscultation; and there is increased resonance, accompanied by puerile respiration, on the opposite side. The heart is more or less displaced towards the affected side, whilst there may be signs of dilatation and hypertrophy of its right cavities, associated with anasarca and ascites. After death, the lung on the retracted side is found to have become shrivelled to one half or even one fourth of its natural size, owing to its conversion into a tough fibrous material, with obliteration of its air-cells, and usually more or less dilatation of its bronchi; whilst that on the opposite side is much enlarged, and presents no evidence of the existence of tubercle or of chronic disease.

* Case 11, reported by M. Jaccoud.

† See Reynolds's System of Medicine, Vol. III.

REFERENCE TO, AND ANALYSIS OF, THIRTY CASES OF CIRRHOSIS OF THE LUNG (CORRIGAN).

No. of Case.	Observer and Reference.	Sex and Age.	Alleged Duration.	Hæmoptysis.	Lung affected.	Flattening of Thorax.	Diminution of bulk of Lung.	Dilatation of Bronchi.	Displacement of Heart.	Size, etc., of Heart.	Dropsy.	Exceptional symptoms or modes of death.	Presence of Tubercle, or chronic lobular Pneumonia.	No. of Case.
1	Corrigan. Dub. Med. Journ., 1838.	M. 7	3 months	Occasional	R	Yes	—	Yes	—	—	—	—	None	1
2	Dr. Sutton. Med. Chir. Trans. 1865, p. 299.	M. 26	4 months	Very slight	L	No	No	No	No	Healthy	—	—	None	2
3	M. Charcot. Pneum. Chron., Paris, 1860, p. 37.	M. 61	4 months	Rusty sputa	R	No	No	No	—	Rather large	—	—	None	3
4	Dr. Pollock.	M. 30	9 months	Yes	L	Yes	Yes, slight	Very much	Very slight	Healthy	—	Death from rupture of aneurysm of aorta	None	4
5	M. Barth. Mém. de la Soc. Méd. d'Observ. 1856, T. III.	M. 7½	?	No	L	No	No	Very much	No	—	—	Gangrene of cheek. Death from exhaustion, etc.	"Not the slightest trace of tubercle" in lung affected; but a few grey granulations in right	5
6	Dr. Barlow. Path. Trans., Vol. XVI., p. 39.	M. 34	?	Very slight	L	No	—	No	Slight	R. V. hypertrophied. Tricuspid murmur	Anasarca (kidneys large and coarse)	—	None	6

No. of Case.	Observer and Reference.	Sex and Age.	Alleged Duration.	Hæmoptysis.	Lung affected.	Flattening of Thorax.	Diminution of bulk of Lung.	Dilatation of Bronchi.	Displacement of Heart.	Size, etc., of Heart.	Dropsy.	Exceptional symptoms or modes of death	Presence of Tubercle, or chronic lobular Pneumonia.	No. of Case.
7	Dr. Mayne. Dub. Hosp. Rep., 1857 (May), p. 129.	M. 54	1½ year	No	R	No	—	Very slight	No	Healthy	—	Gangrene of lung	None	7
8	Dr. Bright. Miscel. Inspec. Bk. 19 (Guy's Hosp.)	F. 33	2 years	No	R	Yes	—	Yes	Much	Smallish	—	Diarrhœa	None	8
9	Dr. Foot. Dub. Quar. Journ., Feb. 1866, p. 206.	M. 29	2 years	Single, fatal	L	Yes	Yes	Yes	—	—	—	Fatal hæmoptysis	Lung affected not stated to contain tubercle, but a tubercular cavity in right	9
10	Dr. Dickinson. Path. Trans., Vol. XIII., p. 60.	M. 40	2 years	No	R	Yes	Yes	No	—	Fatty fibrinous coagula in R. V. and pulmonary artery	Ascites and anasarca	—	—	10
11	M. Jaccoud. Clin. Méd., Paris, 1867 p. 83.	M. 55	3 years	Slight	R	—	Yes	Yes	—	—	Anasarca	—	Lung affected contained a very small quantity of crude and slightly softened tubercle. L. lung healthy.	11

No. of Case.	Observer and Reference.	Sex and Age.	Alleged Duration.	Hæmoptysis.	Lung affected.	Flattening of Thorax.	Diminution of bulk of Lung.	Dilatation of Bronchi.	Displacement of Heart.	Size, &c., of Heart.	Dropsy.	Exceptional symptoms or modes of death	Presence of Tubercle or chronic lobular Pneumonia.	No. of Case.
12	Dr. Law. Dub. Quar. Journ., 1848, p. 459.	F. 16	3 years	Occasional	L	—	Very much	Yes	Very much	—	—	—	In lung affected, no trace of tubercle, but "a few tubercles scattered through" right	12
13	Dr. Addison. Clin. Ward Book, Oct., 1859.	M. 62	3 years	Very slight	R	No	—	Very slight	—	R. V. hypertrophied Tricuspid murmur	Anasarca (kidneys slightly granular)	—	None	13
14	Sir D. Corrigan. Dub. Hosp. Gaz., 1857 (Dec.).	F. 24	4 years	No	R	—	Very much	Yes	Much	—	(Edema pedum	Diarrhœa (ulceration of intestine)	None	14
15	M. Charcot. Pneum. Chroniq., Paris, 1860, p. 19.	M. 46	4 years	Copious	R	No	Yes	No	—	Healthy	Anasarca (kidneys healthy)	Diarrhœa	None	15
16	Dr. Wilks. Path. Trans., Vol. VIII., p. 39.	M. 28	4 years	Occasional	L	Yes	Much	Yes	Much	R. V. slightly hypertrophied	Ascites and anasarca	—	None	16
17	Dr. Peacock. Mon. Jrnl. of Med., Ap., 1855, p. 281.	M. 19	4½ years	Considerable	R	Yes	Much	Yes	Much	Healthy	—	—	None	17
18	Dr. Sibson.	M. 33	Years	No	L	Yes	Slight	Slight	—	R. V. hypertrophied	—	—	None	18

No. of Case.	Observer and Reference.	Sex and Age.	Alleged Duration.	Hæmoptysis.	Lung affected.	Flattening of Thorax.	Diminution of bulk of Lung.	Dilatation of Bronchi.	Displacement of Heart.	Size, etc., of Heart.	Dropsy.	Exceptional symptoms or modes of death	Presence of Tubercle, or chronic lobular Pneumonia.	No. of Case.
19	Sir D. Corrigan. Dub. Quar. Journ., 1838, p. 273.	F. 30	Some years	Yes	R	Yes	Much	Yes	Much	—	Ascites and anasarca	Diarrhœa	None	19
20	Dr. Greene. Dub. Quar. Journ., 1846, p. 510.	M. 36	5 years	No	R	Yes	Yes	Slight	Much	—	—	—	None	20
21	Dr. Jennings. Dub. Quar. Journ., Feb., 1866, p. 205.	M. 40	5 years	Profuse	R	Yes	Yes	Yes	Much	—	—	—	None	21
22	Dr. McDowell. Dub. Quar. Journ., 1852, p. 462.	M. 35	5½ years	No	R	Yes	Very much	No	Much	Obstruction of P.A. and hypertrophy of R. V. Tricuspid murmur	Ascites and anasarca	—	None	22
23	Dr. Mayne. Dub. Hosp. Gaz., 1860, p. 33.	M. 20	6 years	No	L	Yes	Very much	Slight	Much	—	—	—	Affected lung contained a few pea-sized chalky masses, but no distinct evidence of tubercle; no tubercle or cheesy masses in right lung	23
24	Dr. Walshe.	M. 68	Many years	No	R	Yes	Yes	Yes	Much	Dil. & hy-	Slight ana-	Diarrhœa	None	24

No. of Case.	Observer and Reference.	Sex and Age.	Alleged Duration.	Hæmoptysis.	Lung affected.	Flattening of Thorax.	Diminution of bulk of Lung.	Dilatation of Bronchi.	Displacement of Heart.	Size, etc., of Heart.	Dropsy.	Exceptional symptoms or mode of death	Presence of Tubercle or Chronic lobular Pneumonia.	No. of Case
	Med. Tim. & Gaz., Feb., 1856, p. 157.									pert. of R.A. R.V.? L.V. small and fatty	sarca (kidneys coarse)			
25	Dr. Gull. P. M. Record, 83, 1865 (Guy's).	M. 29	Many years	Sputa streaked	L	—	Very much	Very slight	Slight	R. V. hypertrophied L. V. weak	Ascites and anasarca	—	None	25
26	Dr. Stokes. Diseases of Chest, 1837, p. 157.	M. 40	Many years	No	L	No	Yes	Yes	Much	R. V. hypertrophied	—	—	None	26
27	Hérard & Cornil. De la Phthisie, p. 168.	F. 39	Many years	Considerable	L	—	Yes	Very much	—	R. V. hypertrophied	Ascites and anasarca (slight)	Embolism in brain	None	27
28	Lennec. 4th edit., Transl. (Forbes), p. 167.	M.	20 years	No	L	Yes	Very much	Very much	—	—	—	Hæmorrhage into brain	None	28
29	M. Barth. Mém. de la Soc., d'Observ., T. III., p. 481.	M. 57	27 years	Once many yrs. before death	R	Yes	Much	Yes	—	R. V. hypertrophied	—	—	None	29
30	M. Barth. Ditto, p. 491.	F. 70	From childhood	No	L	No	Very much	Very much	—	Smallish	—	Cancer of œsophagus	None	30

Dr. H. C. Bastian, *5th of November*, 1867

5. Cancer of the anterior mediastinum, probably originating in the thymus gland.

The patient was a woman, aged 36, who died in the Middlesex Hospital, on the 27th of October. All through the summer she had suffered from short breath and frequent cough, and since July her feet had been œdematous. In September, the dyspnœa and cough became much aggravated, and a good deal of swelling was noticed on the left side of the neck. She was admitted into the hospital, under the care of Dr. Murchison, on the 15th of October.

On admission, there was urgent dyspnœa, frequent hacking cough, and much muco-purulent expectoration. The left hand and arm were very œdematous, and there was much œdematous swelling above the left clavicle; the feet also were slightly œdematous.

On physical examination of the thorax, all the signs of great liquid effusion on the left side were found to be present, and this side measured one inch more in circumference than the right. The dyspnœa became more urgent; and, on the 18th of October, paracentesis was performed, and forty-six fluid ounces of clear sanguinolent serum were drawn off. This was followed by great temporary relief; but the fluid rapidly re-collected, and, on the 24th of October, the operation was repeated, and twenty fluid ounces of similar fluid were removed. Signs of congestion of the right lung now showed themselves, and the patient died on the 27th of October.*

On *post-mortem* examination, a nodulated cancerous tumour, about three inches in length, was found immediately behind the upper part of the sternum and in part of the left innominate vein, which was compressed and partially surrounded by it, and, together with the terminal portions of the left internal jugular and subclavian veins, was plugged by firm adherent masses of fibrine. The tumour consisted of firm, white, juicy, cancerous tissue; but at its lower part was a portion resembling fatty tissue; and this, on microscopical examination, was found to be composed chiefly of fat, but also showed distinct traces of thymus structure. The left pleura was thickly studded with cancerous nodules, and filled with bloody serum; numerous cancerous nodules were also scattered over the pleural surface on the right side. The left lung was collapsed and partially infiltrated with cancer. The

* The symptoms of this case will be found in greater detail in a clinical lecture by Dr. Murchison, in the Brit. Med. Journal for Feb. 22nd, 1868, p. 165.—Ed.

bronchial and mediastinal glands were infiltrated with cancer, and cancerous nodules projected into the pericardium. A chain of cancerous glands extended on both sides into the neck. Both pneumo-gastric nerves appeared to have become incorporated with a mass of cancerous nodules; but, on microscopical examination, the nerve-fibres, though separated and surrounded by cancer-cells and nuclei, could be traced, apparently without solution of continuity, through the cancer. (Plate III., fig. 4.) Mr. Moore suggested to me that most likely the thymus was the seat of origin of the cancer in this case, and not improbably it will be found to be so in other cases of mediastinal cancers. This may always be suspected when the mass of the tumour, as in this case, is seated in front and above the left innominate vein.

Dr. Cayley, *5th of November*, 1867.

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6. *Specimens of lung, liver, and kidney, showing the close histological affinity of tubercle (grey granulation) to the early stage of fibroid degeneration or substitution.*

At the present time, when the question of the inoculability of tubercle is attracting so much attention, it is a matter of great importance that pathologists should not only be quite agreed as to the microscopical characters of that particular morbid product which they call tubercle, but also that they should be thoroughly familiar with the minute structure of those other morbid products which are most akin to it histologically, and which, therefore, might possibly be confounded with tubercle on microscopical examination.

In common with many other pathologists, I look upon the grey granulation, such as we meet with in cases of acute tuberculosis, as the type of tubercle: so that these bodies, first described by Bayle, and regarded as distinct from tubercle, are now looked upon as the only morbid products undoubtedly deserving this name. This view is based upon the fact of the grey granulation being the only one of the morbid products to which the name has at various times been applied, that has a constant structure in whatever organ of the body it may be found, and on the fact that it occurs in various organs and tissues of the body stimultaneously in the diseased condition known as Acute Tuberculosis. Now I am prepared to show that even an additional complication must be introduced into the history of tubercle, as I think that the microscopical specimens which I submit to the

examination of members of the Society will clearly demonstrate that the histological elements met with in the tubercular grey granulation are indistinguishable from those met with in the early stages of what has been called fibroid degeneration. For the sake of comparison, I have brought sections through grey granulations, as they occurred in the lungs, liver, and kidney of a child who died during an attack of acute tuberculosis, and also other sections (all from specimens hardened in chromic acid) of similar organs in which the so-called fibroid degeneration was advancing, taken from individuals in whom there was not the slightest evidence of the existence of tuberculosis.

It is not my intention to enter minutely into the histological characters of tubercle, since this is now pretty widely known, and the structural affinity of its more characteristic elements to those entering into the composition of lymphatic glands has been fully insisted upon by Virchow and others. Suffice it to say that it has a fibro-nuclear structure; and that, on examination of transverse sections, a number of spherical or ovoidal nuclei may be seen, whose prevailing size is about $\frac{1}{400}$ of an inch in diameter (or rather less than that of a red blood-corpuscle), situated between the meshes of a delicate fibrous network. The nuclei mostly contain a few granules, and one or two larger dots, or nucleoli. Here and there, cells are seen, within each of which is contained a nucleus similar to those just described. A smaller number of nuclei, also, are met with, having a more elongated or oat-like shape, and these occur principally in the vicinity of more abundant fibre-tissue—for in different parts of the section it will be seen that the amount of fibre-element and the number of nuclei bear different proportions to one another. The more or less spherical nuclei of the size named, however, exist far more abundantly than either of the other cellular or nuclear forms. Precisely the same description suffices for the early stages of fibroid substitution; its microscopical elements seem to me almost indistinguishable from those of tubercle. (See Plate IV., figs. 1, 2, and 3.) But, having said thus much, I am bound, on the other hand, to say that in ordinary cases one would not have much difficulty in discriminating between the two, notwithstanding the histological identity of the elements of which they are composed. Tubercle occurs in little rounded masses, whose size rarely exceeds that of a hemp-seed, and each of these masses has been formed, as it were, from several separate centres, so that we see (in transverse sections through a granulation) what appears to be a section through a small tumour,

whose elements are more or less concentrically arranged around several centres. This concentric arrangement of elements is frequently absent altogether in cases of fibroid substitution, and is never by any means so marked as in the grey granulation. Where fibroid substitution is commencing in an organ, the new tissue—often starting from the walls of a blood-vessel—proceeds continuously in different directions, and has no tendency to produce rounded masses only, similar to those of tubercle. It often advances rather in the form of bands, and in proportion as this new tissue grows, so does the proper tissue of the organ disappear before it, so that at last large tracts of fibro-nuclear and fibre tissue are found in the place of the anatomical elements proper to the part, every vestige of whose original structure has ceased to exist. These are pretty well marked differences as regards (1) the more obvious anatomical peculiarities of the two morbid products; and others even more notable obtrude themselves when we consider (2) their ultimate fate, and (3) their mode of origin. Tubercle always existing in the form of miliary tumours, the more internal elements of each of the component nodules (by the aggregation and union of which a grey granulation is formed) have a strong tendency to undergo fatty degeneration and disintegration—a process which may spread outwards, and ultimately involve the whole nodule;* whilst with fibroid substitution, it must be clearly understood that the fibro-nuclear condition represents only one temporary stage of this morbid condition, and that after a time the number of nuclei gradually diminishes, whilst the fibre-tissue becomes more abundant, and the organ begins to diminish in bulk. No particular tendency to fatty degeneration is evinced, and the rounded and ovoidal nuclei seem for the most part to disappear before the gradually increasing fibre-tissue, just as the proper anatomical elements of the part originally disappeared before the fibro-nuclear growth. Then again, tubercle is the anatomical lesion characteristic of a grave constitutional disorder; whilst fibroid substitution seems in most cases to depend far more upon local than upon constitutional causes, and in those instances where it does seem to be more dependent upon a diathetic condition, this condition is one entirely distinct from tuberculosis.

Several pathological conditions have been described under different names, all of which I am disposed to look upon as fibroid substitutions,

* There also seems reason to believe that, more rarely, the grey granulation may shrink in size, and become organized into more fully formed fibre-tissue.

DESCRIPTION OF PLATE IV.

Figs. 1, 2, and 3 illustrate Dr. Bastian's Communication on the close histological affinity of the Grey Granulation of Tubercle to the early stage of Fibroid Degeneration or Substitution. Drawn by Mr. Benjamin George from Dr. Bastian's preparations, and magnified 250 diameters (p. 54).

Fig. 1. Grey granulation in the liver. *a*, Liver-cells bordering new growth.

Fig. 2. Early stage of fibroid degeneration in a large congested liver. *a*, *a*, New growth; *b*, liver-cells bordering new growth and uncompressed.

Fig. 3. Early fibroid degeneration of liver from an organ in which it coexisted with waxy degeneration.

Figs. 4, 5, and 6 illustrate the Report of a Committee on the Specimen of Fibroid (probably Syphilitic) Degeneration of the Heart exhibited by Dr. Fuller. From preparations by Dr. Bastian (p. 109).

Fig. 4 shows the relation of the new growth to the muscular tissue of the heart, magnified 150 diameters. *a*, Wall of artery; *b*, new growth conterminous with arterial wall; *c*, transverse section of muscular fibres separated by new growth.

Fig. 5 shows the early (nuclear) stage of the new growth magnified 250 diameters. *a*, nuclei; *b*, fibro-nucleated tissue.

Fig. 6. The same, at a later, or more fibrous, stage.

Fig 4

Fig 1

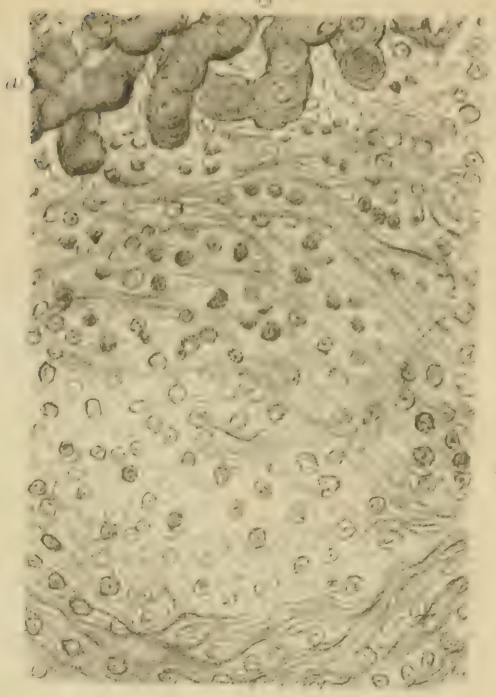


Fig. 5.

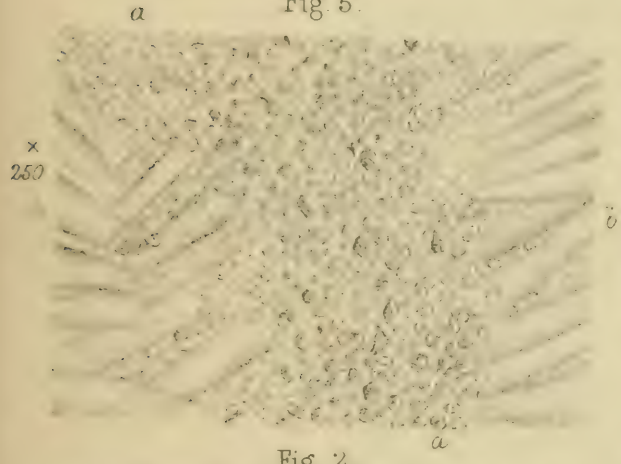


Fig. 6.

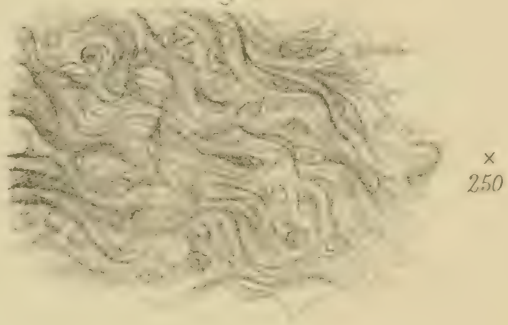


Fig. 2.

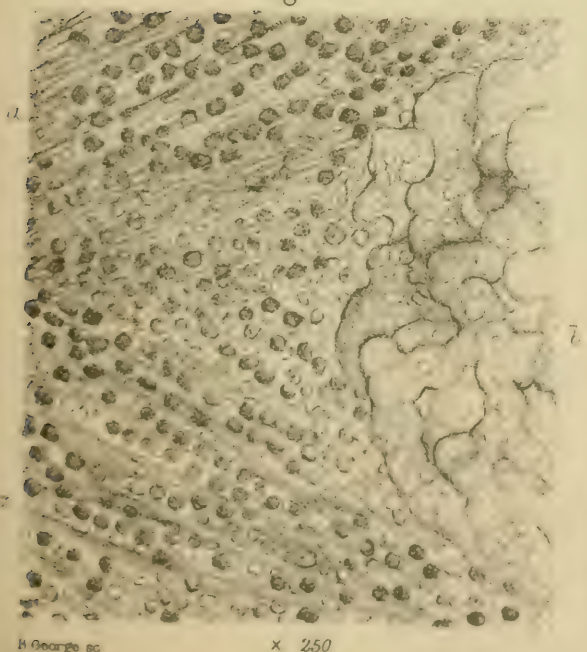
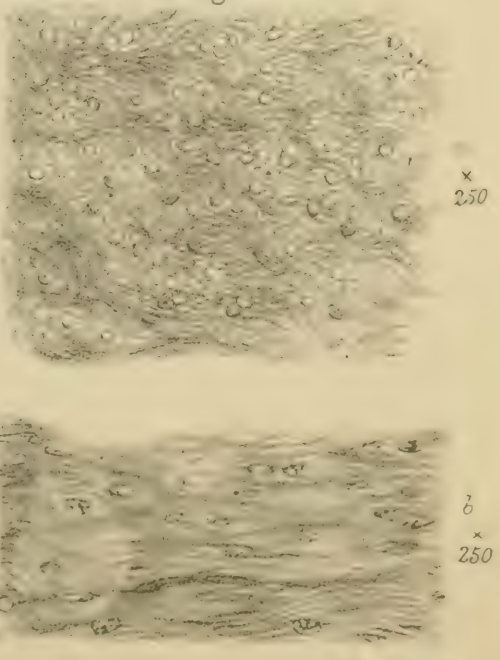


Fig. 3.



whose existence is due more to local than to constitutional causes. Thus, the condition which Laennec described as *grey tubercular infiltration*, which is frequently met with surrounding more or less slowly formed caverns in the lung-tissue, was called chronic pneumonia by Chomel, and is still called so by many pathologists, though Addison and others have described it under the simpler name of grey or iron-grey induration. Chomel and Charcot agree in the opinion that such indurated tissue is due to a new fibre-growth, the structure of which, moreover, they hold to be precisely similar to that which is met with, when what they call chronic pneumonia occurs as an almost immediate sequence of an acute pneumonia. But seeing that the so-called chronic pneumonia thus occurring, and that met with around old lung caverns—or even around adventitious products such as acephalocysts—present similar structural changes, and that these anatomical characters are altogether different from those of acute pneumonia, this name seems an unsuitable one: more especially since the character of the morbid change is absolutely similar to that which Dr. Handfield Jones and Dr. Sutton call fibroid degeneration, and which, when existing in its most extreme form, gives rise to the condition known as cirrhosis of the lung. All these fibroid changes, therefore, as well as the analogous processes which occur in the lungs of artisans whose air-passages are exposed to the contact of foreign particles, and the induration which often binds closely packed groups of tubercle together even where no caverns exist, are intimately related to one another, and are due, I believe, much more to local than to constitutional causes. Because these fibroid indurations or substitutions co-exist so frequently with tubercular, and so-called scrofulous diseases of the lung, we must not look upon them as necessarily and immediately dependent upon the same constitutional cause. It is well known that precisely the same kind of induration is produced around such an accidental cause of irritation as the existence of an acephalocyst in the midst of the lung-tissue, as we find produced around the walls of a tubercular or scrofulous cavern. Mechanical irritation induced by the inhalation of fine foreign particles produces the same kind of induration in the lungs of artisans, who may be quite free from constitutional tubercular taint; and, as I have before shown (see *antea*, p. 47), in a very large number of the cases of cirrhosis of the lung, in its pure form, no tubercle whatever is met with. Such facts should, I think, tend strongly to convince us, not only that fibroid changes may exist alone in the lung, quite independently of any tubercular or scrofulous taint, but also that, when co-existing in the same organ

with the products peculiar to either of these constitutional conditions, these changes may even then be secondary and local, rather than primary. They are, in fact, as we so often see, rather conservative in their nature, and to this extent—so far as tendency is concerned—may be considered as directly antagonistic to the destructive course of the more primary products of disease.

This group of morbid changes has been referred to the category of chronic inflammations by some pathologists, whilst others have preferred to speak of them as fibroid degenerations. In my opinion, the process by which this morbid alteration is brought about differs in important respects from inflammation on the one hand, and from degeneration on the other; it seems to occupy an intermediate position, since it simply leads to the formation of a new growth foreign to the parts. Looking upon a characteristic inflammatory process as one in which there is not only a greatly increased *formative* stimulus, leading to a rapid hyperplasia of tissue-elements, but also a rapid necrobiosis or molecular death of the newly formed, as well as of adjacent old, elements—so that rapid production and rapid death are advancing side by side—the process in question seems to present the formative stimulus and increase, and to be almost entirely wanting in the destructive part of the inflammatory change, since the newly formed elements persist. On the other hand, there is not merely the damage to the actual structural elements of the part, such as we meet with in degenerations (of which the fatty may be taken as the type), but rather the complete disappearance of the functional elements of the organ, whose place is gradually occupied by an advancing new growth. The new growth, it is true, is functionally inert, so that there is a functional degradation of the organ, answering to the textural replacement, although there is no degeneration of tissue in the strict sense of the term. For these reasons, I would propose that all such tissue-changes should neither be styled chronic inflammations nor degenerations, but instead, that the process should be spoken of as one of *fibroid substitution*. This name seems a good one, as it is merely descriptive of what actually takes place, and implies no theory as to the nature of the process by which it has been brought about—concerning which differences of opinion may exist.

Dr. H. Charlton Bastian, *3rd of December*, 1867.

7. *Tumour springing from the horn of the hyoid bone, causing suffocation through lateral compression of the epiglottis.*

On the 5th of November, 1867, a gentleman, aged 23, recommended by Dr. Wray, of Tudor Lodge, Brixton, consulted me for some affection of his throat. He was a lawyer's clerk, from Westmoreland, with a fair and delicate complexion, and spoke in an extremely guttural voice, as if the mouth were full of food, pointing out beforehand that the disease, whatever it was, lay external to the larynx.

Six months before this his voice had first become affected, commencing with a cold and a sore throat. A distinct swelling formed in the left side of his neck, which extended to the throat and affected the speech and swallowing; at times it gave rise to dyspnœa, especially at night, and sometimes there was a little cough. He could swallow both solids and fluids; but as the tumour increased, the quantity varied considerably, and he became thinner. His health had always been good before this, and his family history was unexceptionable. Previous to seeing me he had been to Harrogate for a couple of weeks, and drunk the mineral waters. He had taken no medicine, but had simply used a gargle.

I found that he could still get down solid and liquid food, but not so well as formerly, and that he was exceedingly weak, with a feeble pulse. The fauces were observed to be quite clear and healthy. In the laryngeal mirror was seen a roundish tumour, of the size of a large walnut, deeply embedded in the left side of the throat at the root of the tongue, pushing the epiglottis to the right side and compressing it laterally, so that it looked as if folded in two. The entrance into the larynx was thus most seriously obstructed. The surface of the tumour looked as if its outer capsule had burst, allowing of a view of the interior through an opening somewhat resembling a partially healed-up ulcer. It felt tolerably hard, but was not painful. Externally in the neck, on the left side, was also a swelling, quite above the level of the margin of the thyroid cartilage, where it was soft and moveable, but unquestionably connected with that in the throat, and firmly attached to the horn of the hyoid bone. Both had increased somewhat rapidly of late. The rapidity of growth pointed to malignancy; and as the outlet of the larynx was so much encroached upon, the prognosis was necessarily grave.

I prescribed what seemed indicated under the circumstances, and the patient returned to his family in the north of England. On the 12th of November, I received a letter from his brother, dated from Kirkby

Lonsdale, who informed me that he had died very suddenly on the evening of the 9th. No doubt he had been suffocated by the complete closure of the larynx by the pressure of the tumour.

An instance somewhat similar is recorded in the twelfth volume of the Pathological *Transactions*, page 56, by Dr. Tindal Robertson, of Nottingham, wherein a cancerous tumour, of the size of an orange, springing from the thyroid cartilage, displaced the hyoid bone and epiglottis towards the left side and almost wholly obliterated the aperture of the larynx. Death was sudden when the patient was on his way to the hospital to have tracheotomy performed. I prepared a report on the specimen, in conjunction with Dr. Dickinson, and in the following year, in a *brochure* on the "Hyoid Bone," drew attention to the necessity of an early resort to tracheotomy in similar cases.

Sir Duncan Gibb, *3rd of December*, 1867.

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8. *Necrosis of the arytænoid cartilage obstructing the rima glottidis.*

This specimen was obtained from the body of a man, aged 32, who died in the Middlesex Hospital, while under the care of Dr. Murchison, on the 28th of June, 1867. He had all the symptoms and physical signs of advanced phthisis, and in his body, after death, there was extensive tubercular deposit, with large vomicæ in the lungs and tubercular ulcers in the bowels. For ten days before death, his voice had been husky, and he died at last somewhat suddenly, with symptoms of laryngeal asphyxia. On examining the larynx, its lining membrane was found rough and ulcerated for an inch below the rima glottidis; but the most remarkable circumstance was that the entrance of the larynx was closed by a necrosed portion of bone, a third of an inch in length, which was still loosely attached by soft tissues to a small cavity in the upper part of the larynx. On examination this was ascertained to be the right arytænoid cartilage which was ossified. In the last volume of the *Transactions* (XVIII., p. 32), Dr. Morell Mackenzie has recorded a case in which the left arytænoid cartilage was expectorated during life. Dr. Murchison, *7th of January*, 1868.

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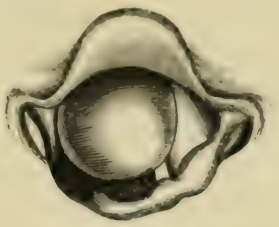
9. *Large growth removed from the larynx, with the aid of the laryngoscope.*

Mrs. R., aged 65, consulted me on the 8th of October, 1867, on ac-

count of loss of voice and difficulty of breathing, which had been coming on since the year 1852. For the last seven years she had been very hoarse, but during the last twelve months her voice had been entirely suppressed.

On making a laryngoscopic examination, a large red globular growth was seen occupying the anterior three-fourths of the glottis. (Fig. 2.) It

Woodcut 2.



was very mobile, and therefore judged to be pedunculated; but as its base was entirely hidden, its origin could not be ascertained.

On the 30th of October, after one previous unsuccessful attempt, the entire growth was removed by the ordinary laryngeal forceps. Immediately after the removal, the patient spoke in a clear natural voice, but she became a little hoarse in the same evening. The next day it was seen that the growth had been attached to the posterior part of the right vocal cord. A slight roughness and hyperæmia in this situation indicated its previous base. Ten days later, the larynx was seen to be perfectly healthy, and the voice and breathing were natural.

The case is interesting on account of the very large size of the growth, which, on removal, measured more than six-eighths of an inch in its longest diameter, and one inch and three-eighths in circumference. Pathologically, it was considered a fibro-mucous polypus.

Dr. Morell Mackenzie, 21*st of January*, 1868.

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10. *Cancerous ulceration of the epiglottis, with large cystic tumour of the neck.*

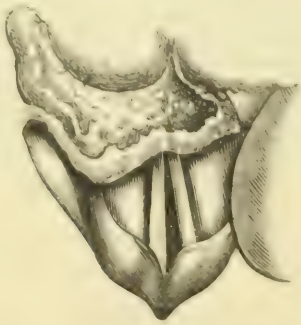
R. T., aged 60, was admitted into the Hospital for Diseases of the Throat, on the 25th of October, 1867, on account of a sore throat and difficulty of swallowing.

He complained of great pain from the middle line of the back of the neck to nearly the chin on the left side, and continued pain on

the same side of the head and face, but he had hardly any pain on the right side. The throat was very sore inside. In swallowing he had excessive difficulty, but no pain. He had long ceased to be able to swallow solids, and now lived almost exclusively on beef-tea. In taking this, he said he experienced a sensation as if the fluid "hung" just opposite the cricoid cartilage, and to get over this difficulty he had always to hold his head back, and let the fluid run down the gullet. The voice was very husky, and there was an occasional cough, with copious expectoration of a tough, slimy appearance. He had also suffered from dyspnœa, but not continuously. There were large, round, hard swellings in the situation of the cervical glands on each side. The patient dated his symptoms from about four months back, when he had got wet through one day, and had remained a long time in his wet clothes; after going to bed, he had a severe fit of shivering, and a fortnight after he first noticed swelling of the cervical glands. There was no family history of cancer, or of enlarged glands. From his wife I learned that he had been subject to swelling of the glands of his neck for nearly two years, and that ever since then he had experienced pain in swallowing.

On examination with the laryngoscope, the right half of the epiglottis was seen to be destroyed by ulceration, and a thickened, irregular, eroded-looking edge extended obliquely upwards on the right side. Along this edge the surface of the cartilage was exposed. (Fig. 3.) The

Woodcut 3.



median glosso-epiglottic fold was pushed to the left side, and excavated. A large semi-globular outgrowth encroached from the left wall of the pharynx, and covered the upper extremity of the left arytæno-epiglottic fold. The left vocal cord did not advance completely to the median line on attempted phonation. This impaired action of the left vocal

cord was believed to be due to paralysis of the left adductor, from pressure of the tumour in the neck on the recurrent laryngeal nerve of that side. The vocal cords were themselves slightly congested.

The patient did not improve from the date of his admission into the hospital. He died in the first week in January.

Post-mortem examination verified the laryngoscopic diagnosis in every respect, with reference to the epiglottic ulceration; but the tumour on the left side, which had been considered during life to be an enlarged gland, was found to be a cystic tumour, of the size of an orange. This tumour was not punctured nor the fluid examined, in order that the preparation might be submitted entire to the Committee on Morbid Growths. Dr. Morell Mackenzie, 21st of *January*, 1868.

Report by the Committee on Morbid Growths, on Dr. Morell Mackenzie's specimen of ulceration of the epiglottis.—The specimen submitted to the Committee for examination, consists of a larynx with a small portion of the tongue attached to it above, and a tumour of some considerable size connected with it in front. The natural characters of the parts are much altered, in consequence of the action of the preservative solution in which the specimen has been kept. A ragged ulcer occupies about four-fifths of the upper surface of the epiglottis, and extends to the adjacent surface of the tongue: the right glosso-epiglottidean fold has been in great part destroyed, a deep excavation being found in this situation. The margins of the ulcer are irregular, but not greatly thickened.

On microscopical examination, the floor of the ulcer is found to be composed of irregular epithelial scales, for the most part withered and flattened, some of which are grouped into concentric masses. In a vertical section, carried through the subjacent structures, similar cells are seen passing to a considerable depth amongst the fibrous layers of the mucous and submucous coats. In some parts the cells present the rounded and softer characters of young epithelial cells, as seen in the rete mucosum.

A section taken from the portion of the epiglottis, apparently unaffected by the ulcerative process, presents the various structures composing it, in the following order from below upwards:—fibro-cartilage, fibro-vascular tissue, and mucous membrane covered with layers of scaly epithelium. All these structures appear perfectly normal, with the exception of the mucous membrane, the glands of which are filled with masses of laminated epithelium-cells; some of these, when free, present a nest-like arrangement.

Remarks.—The ulceration appears to have been of an epitheliomatous character, but of that kind which, commencing within the glands of the part, affects the inter-glandular tissue secondarily. This view of the origin of the process appears to be in harmony with the fact of its slow progress, and of the very limited extent to which it has implicated surrounding parts. On the nature of the tumour attached to the front of the larynx, we feel unable to express an opinion, in consequence of its distinctive characters having been completely destroyed by degenerative changes. 18*th of February*, 1868.

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11. *Primary cancer of the anterior mediastinal glands simulating aneurysm, with death from hæmoptysis.*

The specimen consists of the lungs and trachea, with a mass of enlarged and cancerous glands in the mediastinum and about the root of the right lung of Daniel C., aged 39, who was admitted into St. Bartholomew's Hospital, with symptoms of intra-thoracic tumour.

The nature of the tumour was uncertain, but it was supposed to be aneurysmal; the leading symptoms were dyspnœa and convulsive cough. This diagnosis was further borne out by the mode of his death, as he died from hæmorrhage after expectorating about four pints of blood. The hæmorrhage was gradual, commencing on the evening of the 16th of December, then stopping, recurring again several times, and proving fatal on the evening of the 17th.

At the *post-mortem* investigation, the anterior mediastinal glands were found greatly enlarged, forming an irregularly shaped mass, larger than a cricket-ball, invading the upper part of the right lung along its anterior border, and encroaching also on the root of the lung. The right bronchus was subjected to very considerable pressure, and was greatly narrowed. The right pulmonary artery was also surrounded by the disease, but its coats were uninvolved. The mucous membrane of the right bronchus at the point of contraction was discoloured, and the lung-tissue near it broken down. A small clot of blood lay in the midst of the broken-down tissues. No large branch of the pulmonary artery had given way, and the actual vessel, or vessels, whence the blood issued, was not discovered. A considerable quantity of clotted blood was found in the bronchi of the right lung, and in the bronchus leading to the lower lobe of the left lung. No other organs were unhealthy.

Dr. W. S. Church, 21*st of January*, 1868.

12. *Case of eversion of the sacculus laryngis.*

The specimen is the larynx of a patient who died in Guy's Hospital of cancer of the stomach. He had been a naval school-master, and was a man of great acquirements. He lay long in the hospital, and conversations with him were frequent, because his case was obscure, and he was much better able to give an intelligent account of himself than the average of patients; nevertheless, it was not noticed that his voice was remarkable in any way. I often spoke with him, and his voice was always such as not to attract attention. It was, then, with some surprise that, on inspecting his body, I found the appearance shown in the preparation; viz., what at first sight appeared to be a tumour hanging down over one of the vocal cords; it was semi-elliptical in shape, and it was rooted above in the anterior half of the ventricle of the larynx. On examining the tumour, I found that it could be easily put up into the usual position of the sacculus of the larynx; that when so placed—the tumour inverted, and returned behind the false vocal cord—it appeared as the sacculus laryngis, while without it there was no sacculus laryngis; so that there could be no doubt that it is an everted sacculus. When replaced, it very easily fell out of its position again, and re-appeared as it is now seen, as a pendulous laryngeal tumour, very tempting to one skilled in the removal of laryngeal polypi.

Dr. Moxon, *4th of February*, 1868.

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13. *Intra-thoracic cancer, involving the bronchial glands, spinal column, etc., occluding the left bronchus, and converting the left lung into a series of abscesses.*

A. K., aged 23, single, a servant-girl, was admitted into the Victoria Park Hospital, under the care of Dr. Risdon Bennett, on the 29th of October, 1867. She was a well-grown girl, rather spare, with brown hair and eyes, and, except that she was rather pale, of a healthy aspect that did not indicate any very serious disease. She did not give a very distinct or satisfactory account of any previous illness, but stated that whilst away for her holiday at Whitsuntide, she had felt very unwell and out of sorts. Previous to that time her health had been very good. After a month's absence, she returned to town, feeling much better, and went to service. In about a fortnight, however, she broke down. The catamenia became suppressed. She had hæmoptysis to the extent of three

or four ounces, with some cough and expectoration; the latter, however, was but scanty. She lost flesh and strength, and had night-sweats.

On her admission, the following were the physical signs that presented themselves, on examination: The thorax was well formed. There was absolute dulness over the left anterior region of the chest; absence of respiration, and no increased vocal resonance; nor much, if any, diminution of motion. The heart-sounds were a little ringing in character, and audible throughout the whole of the left side. The pulse was feeble, and under 100. The tongue was clean. The breathing was calm, and perfectly easy; there was a little occasional cough, with slight simple mucous expectoration. She was feeble, and somewhat put out of breath in walking. Her appetite was good, and there was no febrile disturbance.

On the 15th of November, she complained, for the first time, of pain between the shoulders, which was relieved by a small blister. On the 22nd of November, the following record was made of a very careful physical examination: Heart-sounds heard more distinctly to the right than to the left of the sternum; very little impulse either to be felt or seen, but this is most appreciable by the touch, immediately to the left of the sternum, an inch above the nipple. Sounds audible throughout the chest. Dulness absolute throughout the left side. Respiration altogether inaudible, except it be at the extreme base posteriorly, where faint, questionable, and probably transmitted breath-sounds may be detected. In the same situation, the dulness is also somewhat less marked. Diminished motion; no vocal thrill. On the posterior aspect, the left side appears less prominent than the right, and it is found by measurement to be half an inch less from the sternum to the spinous processes. Anteriorly, the dulness, terminates abruptly at the mesian line of the sternum. On the 6th of December, the following note was made: Within the last fortnight she has gradually lost power in the lower extremities; this is most marked in the left leg, where it was first noticed. She also complains of numbness, which has gradually extended upwards as far as the epigastrium. There is some difficulty in passing water, but no incontinence, nor any paralysis of the sphincter ani. There is still some pain, though less than at one time, over the dorsal vertebræ, with tenderness on percussion. Her countenance is placid, and even cheerful in expression. Scarcely any cough or expectoration, and the most remarkable absence of dyspnœa, except when moved. The tongue is clean. The appetite fairly good. Pulse feeble, usually under 100. Temperature in the

axilla, 98·5°. On the 18th of December, the paralytic symptoms were more pronounced and the belly tympanitic. Profuse sweating. Some epigastric uneasiness, and diminished appetite. Urine, 1·022, acid, scanty, and slightly albuminous. Temperature, 97°. Breathing still quite placid. Heart's action more superficial, and attended by a questionable friction-sound. On the 20th, some twitching and starting of the lower limbs. Sphincters still good. Respiration, 24 per minute. Temperature, 97°. On the 27th, paralysis had involved the upper extremities, and the urine was passed involuntarily. A large slough had formed on the back. The tongue had become glazed and dry. The heart was displaced upwards, and there was a slight systolic murmur at the apex. On the 3rd of January, there was observed, for the first time, a projection of the third lumbar vertebra. Breathing rather short and quick; and pulse rapid and scarcely to be felt. On the 5th, for the first time, there was much dyspnœa, with mucous rhonchi and dusky countenance, and she appeared to be sinking. She, however, rallied, the breathing became comparatively tranquil, and she did not finally sink till the 12th of January, when she died apparently from asthenia.

Post-mortem examination.—Body much wasted, well proportioned, and chest well developed; lower extremities œdematous. The heart was found displaced, being drawn upwards. On opening the pericardium, the posterior wall was seen to be thrust forward by a greyish-white mass near its base. The left pleura was greatly thickened, and adherent throughout. The right pleura had here and there a few scattered adhesions. The left lung was converted into a number of small abscesses or cavities for the most part about the size of a Spanish nut, and filled with thick greenish-yellow pus. These cavities showed no lining membrane, their walls being formed by ragged lung-tissue. There was nowhere any healthy lung-tissue detectable. What looked like the remains of lung-tissue was of greyish colour, dotted with pigment, resembling grey hepatization, and of that consistence throughout. On passing the finger down the trachea to the bifurcation, the right bronchus was found to be patent and normal. The left bronchus was completely occluded by the surrounding mass of malignant structure in which the bronchial glands were involved. On laying open the bronchus at the occluded spot, it was found to be pressed on by the malignant growth all round; and below this point the growth had so invaded the walls of the bronchus, that its channel could no farther be traced.

The main portion of the growth lay in front of the descending aorta

and œsophagus, but did not invade their coats. Below the bifurcation of the trachea, it formed a large mass, which completely surrounded the left bronchus, but passed across the right bronchus without either involving or surrounding it, and terminated just before reaching the root of the right lung. It thus lay below the arch of the aorta. Backwards it extended between the left arches of the fourth and fifth dorsal vertebræ and between the roots of the corresponding ribs on both sides. It extended also in some places four or five inches from the bodies of the vertebræ and involved the dorsal muscles. In the vicinity of the fourth and fifth vertebræ it invaded the spinal canal, compressing the cord and its sheath, both of which, however, were healthy. On each side of the body of the third lumbar vertebra, the disease had also invaded the spinal canal. It could be traced likewise along the upper border of the pelvis, a little outside the left iliac vein. The iliac vessels, however, were not involved, nor were the glands on the right side of the chest, except just at the bifurcation of the trachea. The right lung weighed twenty ounces, was somewhat œdematous, and at the base showed a little red hepatization. The mucous membrane of the bronchial tubes was much congested, but they contained no pus. The heart was healthy, weighing nine ounces and a half. The liver weighed five pounds three ounces, and presented a marked example of the common "nutmeg liver," quite as marked as is seen in connection with contracted mitral orifice. The gall-bladder was healthy, and also the spleen, which weighed eight ounces. The kidneys weighed seven ounces and were much congested, being throughout of a dark-red colour. The intestines were congested, but otherwise healthy, as were also the mesenteric and lumbar glands; nor was there any malignant deposit in any of the internal organs. The growth presented everywhere the same character, being soft and of a greyish-white or white colour, and yielding, on pressure, an abundance of milky juice. This in many parts was so abundant as to pour out immediately on section of the growth.

Dr. James Risdon Bennett, *4th of January*, 1868.

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14. *Cancer of the heart, lungs, and mediastinum.*

The specimen consisted of the heart, pericardium, and both lungs, as they had been removed from the body, *en masse*. The substance of the lungs and the walls of the heart also, in many parts throughout their

entire thickness, especially in the case of the auricles, were infiltrated by nodules and diffused deposits of soft or medullary cancer. On the surface of the heart this material appeared mainly in a diffused form, constituting elevated patches with flattened surfaces, reminding one of outpoured melted wax or tallow, which had been allowed to cool. The lymphatic glands at the base of the heart and at the root of the lungs were especially the seat of morbid deposit, which also predominated in the course of the vessels, although the calibre of the vessels and air-passages was not interfered with. Masses of the deposit also existed in the substance of the pericardium. On microscopical examination it was found that the morbid growth in all parts had the same characteristics, and consisted mainly of round and oval nucleated cells so commonly found in structures of this kind.

The patient was a lady, aged 20 or 22, who had been four years married and had had one child, and who came under the notice of Sir T. Watson. She had had cough for some time, and latterly this had been worse, and she had been troubled with pains, apparently rheumatic or neuralgic, across the chest, impeding at times her breathing. There was no expectoration, but much wasting, and night-sweats existed. The chest, which had been full and expanded, was unsymmetrical, the left side being visibly flattened; on that side sub-clavicular dulness on percussion existed, also coarse respiration, with some moist sounds and resonance of voice. On the right side behind, in the upper part of the lung, some tubular blowing sound was heard on expiration. The cough was more troublesome when the patient lay on the left side, than when on the right side.

The case was regarded as one of tubercular phthisis, and the patient went to Cannes. On the 13th of March, Dr. B. wrote from Cannes, that not long after the patient's arrival there, she had pain in the left shoulder, and that gradually the whole of the left arm became œdematous, obviously from phlebitis. She died on the 19th.

On *post-mortem* examination, general anasarca of the body was found. The pleural sac, on both sides, and the pericardium were filled with serum. The pericardium was much thickened, and adherent to the sternum. The anterior mediastinum was quite filled by a dense white substance, involving all the great vessels; the heart and lungs were in the condition before described. The liver was covered by nodules of the same morbid growth as that in the chest, and a large mass existed in the mesentery. The spleen was coated with a few nodules of the same. The kidneys, uterus, and ovaries were healthy.

Remarks.—This case appeared particularly interesting, from the fact that the early symptoms, both generally and physically, were such as to lead to the impression that the disease of the lungs was pulmonary tubercle.

Dr. John W. Ogle *for* Sir T. Watson, *18th of February*, 1868.

Report on the above specimen of cancer of the mediastinum.—The specimen sent by Dr. Ogle is one of medullary cancer, which fills the anterior mediastinum, and extends, by numerous prolongations into the adjoining thoracic serous membranes, the heart, the lungs, and the lymphatic glands.

The disease in the anterior mediastinum is the primary disease. It lies between the sternum and the great arteries, and is traversed near its posterior part by the left innominate vein. Towards the neck it is narrow, and on one side it has been cut through; between the pleuræ its breadth increases to three inches, and its thickness, from before backwards, is nearly two inches. Its base is concave and spreads over the upper and anterior part of the pericardium. To all these membranes it is intimately adherent. Between the innominate and left subclavian arteries a small portion of the tumour extends back, and adheres to the front of the trachea, surrounding the thoracic part of the left carotid artery. With this exception, the whole of the morbid mass behind the great vessels is composed of large and small cancerous lymphatic glands. The disease has reached the heart by its anterior surface, and chiefly by the aorta. Between the middle and pericardial coats of that vessel is a layer of medullary cancer, a quarter of an inch in thickness. It is continuous above with the primary tumour, and below with a broad cancerous growth in the front wall of the right ventricle. This growth is nearly half an inch thick: it occupies the whole of the space between the pericardium and endocardium, having wholly supplanted the muscle, but not the carneæ columnæ in the wall of the ventricle. The muscular tissues of the apex of this ventricle and of the posterior surface are healthy; but there is a deep notch a little to the right of the apex, which has the appearance of an original peculiarity in the form of the heart. Besides this mass of cancerous disease in the right ventricle, there is a similar but thinner layer under the pericardium of the pulmonary artery and of the left ventricle; and there are numerous small flat tubercles of the same nature beneath various parts of the pericardium, but chiefly situated in the fat beside the

superficial vessels. The disease has not extended into the auricles at the back of the heart.

The right lung is comparatively healthy. It is partly adherent to the thickened pleura on its inner surface, but the cancerous matter it contains is only that of the bronchial glands at the root of the lung. The left lung is more extensively adherent on its inner surface, and its upper and inner parts are chiefly solid. It appears to have become partly infiltrated with cancer through the adhesions between its pleura and the left side of the primary tumour. The root of the lung is also more occupied with cancer, and its vessels are compressed. The canal of the left innominate vein is obliterated within the tumour, being partly much compressed, and partly filled with a long cord of adherent fibrine.

The primary tumour has a fibrous envelope, and is composed of rounded lobes, some larger, some smaller, than nutmegs. They are separated from one another, as is usual in medullary cancer, by curved and branching layers of fibrous membrane. There is no certain indication that these are residual portions of the structure of the thymus gland, of which no other characteristic remains; but the correspondence between the natural organ and the new growth in situation and in form, the anatomical relation of the primary tumour to the vessels, and especially to the innominate vein, and the age of the patient, give colour to the supposition that before spreading into the adjoining organs the growth originated in the thymus gland.

Mr. Charles H. Moore,
Mr. Sydney Jones, *3rd of March*, 1868.

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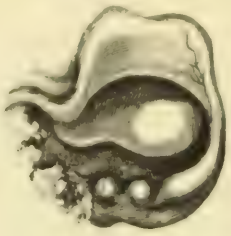
15. *Cancerous ulceration of the larynx.*

Mr. H. R., a gentleman aged 61, came under my care in October, 1866, on account of hoarseness, dysphagia, and slight dyspnœa. These symptoms had been progressively increasing for the last six months. An examination with the laryngoscope showed great thickening of the cushion of the epiglottis and total destruction of the right arytæno-epiglottic fold. (Fig. 4.) The right capitulum Santorini seemed to stand by itself. The interior of the larynx could not be well seen, principally on account of the quantity of thick secretion blocking it up. The cervical glands on each side of the neck were enlarged—one on the right side being about the size of a hen's egg. The dyspnœa

gradually increased, and the patient died one night in February, 1867, having frequently refused to submit to tracheotomy.

Woodcut 4.



After death, the laryngoscopic appearances were found to be completely verified by the *post-mortem* condition. There was a large irregular ash-coloured ulcer extending from the right wall of the pharynx to the interior of the larynx, destroying the right arytæno-epiglottic fold, the greater part of the right ventricular band, and a portion of the right vocal cord. The under surface of the epiglottis was greatly thickened and superficially ulcerated in the median line. There were numerous greatly enlarged and very hard glands on both sides of the neck and on the right side of the trachea.

Dr. Morell Mackenzie, 18*th of February*, 1868.

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16. *Case of acute inflammation of the bronchial glands, with double hydrothorax, etc.*

This specimen consisted of the lungs and their roots, taken from the body of a man, aged 40 years, who was admitted into Guy's Hospital, suffering from extreme and distressing dyspnœa and pain about the heart, with feeble, flickering pulse. He lived only a few hours after his admission; his condition during that time was such, that his case was viewed as one of angina pectoris, in an aggravated form.

He was a car-man, described as temperate, and the history given said that he had been liable to cough since Christmas; but that he had not been so ill as to leave his work until the day before his coming into Guy's, on which day he was taken suddenly worse when at his work, being seized with pain in the left side, and shortness of breath such that he was quite disabled.

When inspected twenty-two hours after death, the body was without any outward sign of dropsy. The man was rather tall, of bony form, with strong aquiline features, and greyish-dark hair.

There was some straw-coloured liquid in all the cavities of the trunk, but the distribution of this liquid was such as at once excited inquiry; for while there was but a pint in the abdomen, there were two pints and a half in the left, one pint in the right pleura, and four ounces in the pericardium. In each case the surface of the serous membrane was free from any sign of inflammatory action. Thus, though the condition of dropsy was general in the cavities of the body, yet the ordinary rules of proportion in the relative amounts of liquid in the several cavities in general dropsy were notably set aside. Upon examining the heart and kidneys, as the usual causes of dropsy, there was no fault to be found in either; the anatomy of the heart was perfect, and the kidneys were healthy, the few ounces of urine which the bladder contained being also free from albumen. A search for the cause of the hydrothorax showed the bronchial glands greatly enlarged, being of sizes from that of large walnuts down to cherries. The substance of the glands was deep-red, and blood was effused in their tissue; while around them the structures of the roots of the lung were charged with white plastic lymph, the pleura over this lymph not having any fibrous coating. The glands within the lung were affected equally with those without; and about one of these, as if from it, there was pneumonic hepatization for a small space. Microscopic examination showed the gland-tissue with its elements proliferating, but no appearance of an organized tumour. The only other diseased condition which was found in the body, was one that was equally peculiar. In the jejunum were several ulcers of small size, or rather they were suppurating patches of the size of peas and horse-beans, generally in the valvulæ conniventes. The microscope also showed here the conditions of early inflammatory change.

I have called this a case of acute inflammation of the bronchial glands; but only because these are the only parts that I can show to the Society. The real nature of the case I can only conjecture. Analogy with cases of cancer of the bronchial glands, where hydrothorax is commonly present, would seem to throw light on the case; but in these cases of cancer, hydrothorax is caused by a growth of the cancer *into* the bronchial veins, and no such condition existed in the case before the Society. Indeed, any view which is limited to the bronchial glands, would not explain the state of the pericardium, jejunum, etc. It may be that the effusions in the cavities were of an inflammatory origin, and the condition would then correspond to a term which I have heard used by Dr. Gull, namely, "catarrh of the serous membranes;" if so, the ex-

cessive inflammation of the glands and the fact of the presence of lymph close under a serous membrane, without that most inflammable membrane lighting up into inflammation, remain very curious, and require the supposition of some specific quality of the inflammation itself, setting limits to its tendency to spread.

Dr. Moxon, *21st of April*, 1868.

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17. *Case of abscess in larynx.*

This specimen of larynx was taken from a man who died in Guy's Hospital, having been admitted for chronic bronchitis. His condition was serious when he entered; there was some œdema of the feet; and the breathing was difficult, the usual noises being heard on auscultation, with a preponderance of râles. However, his death was ultimately sudden; he had not shown signs of sinking, but he had for three days made complaint of pain in the throat, increased during swallowing. One night dyspnœa became quickly extreme, and he died. His death in this rather unexpected way created suspicions that a deep-seated aneurysm might exist; but inspection disproved the surmise. The mucous membrane in the lower bronchial tubes was in a granular state; and the right heart and pulmonary artery were hypertrophied and dilated. The right ventricle's wall was $\frac{1}{4}$ inch thick, and very hard; its cavity had twice the usual capacity. The apices of the lungs were scarred with deep furrows, at the bottom of which were the blackened relics of former phthisis; there was some compensatory emphysema in the neighbourhood of this. The kidneys and other organs were healthy, except that an ulcer was found in the stomach in its lower curvature. This ulcer had penetrated the muscular coats; but the erosion was kept from the peritoneal surface by an adventitious layer of one-eighth of an inch in thickness. No sign of the ulcer was visible externally, and by transmitted light it was found that the coat was actually thicker at the ulcerated spot. The larynx showed a condition of extreme œdema, and on closer examination there was found a collection of pus of the size of a horse-bean; it had not the wall of a well-defined abscess. It was situated at the hinder end of the left arytæno-epiglottidean fold. The point at the hinder end of the vocal cords was slightly eroded, and there was a flake of thick epithelium along the cords themselves.

I bring this case before the notice of the Society because I believe that acute suppuration of the larynx in adults is rare, unless it be part of

the process of syphilitic disease. There were no signs of syphilis in this man. As for the other causes of acute laryngitis, I could not learn that the man had been using strong inhalations, and he had no kidney-disease. His pulmonary phthisis was long bygone, but there were some suspicious spots in the larynx, as of tubercular ulceration, and this may have had to do with the abscess; but if so, it is a very rare occurrence. Dr. Wilks kindly pointed out to me a case which occurred to him in the year 1863, when a man died very quickly with laryngeal symptoms, and he found most severe inflammation of the larynx, with formation of pus amongst its muscles.

Dr. Moxon, 21*st of April*, 1868.

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18. *Case of cancer of the lung and bronchial glands, liver, and pancreas.*

Mary Richards, aged 38, photographer, was an in-patient at the Hospital for Consumption, Brompton, under the care of Dr. Pollock, from whose case-book the following clinical notes are taken. Father and mother died of phthisis at ages of 40 and 60 respectively. Patient's health good until fifteen months before death, when she had some hæmoptysis, the blood expectorated being black and clotted. The hæmoptysis has been frequently repeated since, and the blood has been florid for two months up to admission, in February, 1868. On admission, complained of bad cough; white thick expectoration, with blood occasionally; pain, throbbing and continuous, in left side; dyspnœa; night-sweats; emaciation; appetite bad; bowels confined; catamenia absent.

Physical signs were: absolute dulness in front of left lung, not encroaching on middle line; very deficient respiration to fourth rib anteriorly; tubular breathing in supra-spinous fossa and scapular region; deficient respiration, with dulness, from scapula to base; cardiac dulness extensive; double murmur (rough) at base, most intense opposite second intercostal articulation, first sound not clear anywhere; right lung resonant; no intercostal fulness; pulse weak, unfilled. Patient died on the 26th of April, 1868.

Post-mortem examination.—Some flattening on left side. Pericardium contained a small amount of discoloured serum, with flakes of lymph; some granulations on both pericardial surfaces, giving evidence of recent pericarditis. An ovoid elevation, two inches and a half by two, projected from inner surface of left parietal portion of

pericardium on a level with left auricle; but between it and the auricle, another rounded nodule projected, about the size of an unshelled walnut; this nodule formed a bulging within the auricle one inch and a half by one and a quarter, between the apertures of the pulmonary veins. The linings of the pericardium were not invaded.

This mass forms an extension downwards from a large mass of cancerous glands situated about the bifurcation of the trachea, and extending also upwards and to the left above, encroaching upon the pulmonary artery at its bifurcation, materially diminishing the calibre of its left branch, surrounding the left division of the trachea, and much diminishing the size of its canal, in fact, almost obliterating it, and also somewhat compressing the aorta from below as it arches over root of lung. Laterally this mass invades the left lung from the root, occupying about one-third of the organ. Its consistence and appearance on section are uniformly those of scirrho-encephaloid; its boundary line in the lung is uneven, presenting many projecting points.

The lung beyond is, at the upper two-thirds, consolidated, of a mottled grey appearance, with numerous fine fibrous bands, the pneumonic lobules having apparently become conjoined to form the solid lung; in the lower third of the lung the pneumonic portion has softened down into a pulpy material, leaving the fibrous bands more distinctly visible. The pleura covering the lung is generally but slightly thickened, showing the mottled appearance of the lung underneath; it was adherent except at apex and base. It became easily lacerated over posterior part of lung during removal. At the apex is a cavity, the size of a Maltese orange, bounded below by the lung, covered by thick pleura, and somewhat flattened. At the extreme base is another large cavity, divided by imperfect septa, bounded above by the lung, and covered by very thin pleura, the parietal pleura being at this part considerably thickened. Both these cavities closely resemble lung-cavities, and it requires some care to identify them as of pleural origin. They contain a pale puriform fluid. The liver weighs seventy-five ounces; it is uniformly enlarged; its upper surface rounded and slightly uneven; the edge is sharp. On section, the substance is much pigmented, having an exaggerated aspect of nutmeg liver; but the pigment is not uniformly distributed, some portion of the liver being much darker than others. The whole appearance is that of infiltrated cancer with pigmentary deposit. Spleen normal. Kidneys somewhat granular, enlarged. The head of the pancreas is converted into a mass the size of a small orange, slightly irregular, rounded, hard; on section, presenting

the appearance of scirrho-encephalic cancer. The bile-duct, which is dilated, arches over the tumour. Stomach and intestines are healthy.

Remarks.—This case appears to have been one of cancer affecting the bronchial glands, in the first place; thence invading the left lung, and affecting secondarily, and to a slight extent, the right. The affection of this lung, and also the consolidation of the left lung beyond the invading mass of cancer, appear to consist of a cancerous pneumonia—there being abundant cancer-elements microscopically—analogous to that referred to by Rokitansky, as secondary to cancer in other parts. The pancreas was affected as usual at its duodenal end, but not through contiguity with any neighbouring organ. I have not been able to find any distinct microscopical evidence of cancer of the liver; but the liver-tissue seems arranged in an alveolar manner, the walls of the alveoli consisting of very granular liver-cells, and the irregular interspaces being filled with blood apparently not enclosed in any vessel.

Dr. R. Douglas Powell, *5th of May*, 1868.

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19. *Lung showing perforation, from a case of pneumo-thorax.*

This specimen was removed from the body of Charles M., aged 34, a patient of Dr. Quain's, at the Hospital for Consumption, Brompton.

Post-mortem examination, thirty hours after death.—April 1, weather cool; no marked decomposition. Right side of chest bulged, with hyper-resonance extending across median line. A trochar, with a branched cannula, having a branch connected by tubing with a water-pressure gauge, was thrust in at fifth interspace; the air-pressure within the pleura was found to be equal to four inches. Right border of heart at left sterno-clavicular line; upper border of liver four inches below right nipple; right lung collapsed; some old adhesions at apex; no fluid in pleura, which was opaque, thickened, flabby-looking; at its lateral part, three inches below apex, a well-defined yellowish-white circular patch was seen, about the size of a shilling, the surface of which was slightly depressed, and at its anterior margin a small slit was perceived, from which, on inflating the lung, air escaped freely. On making a vertical section through this patch at right angles with the slit, it is found to form one (the longest) side of a triangular superficial cavity of the size of a filbert; the next longest side meets the pleura anteriorly at the point of perforation, forming with it an acute angle, and slanting backwards into the lung-

substance; the third side is short, and forms almost a right angle with the pleura posteriorly, where the cavity is half an inch deep. The pleura is gradually thinned off to a mere film at the point of perforation, and, flapping against the sloping anterior wall of the cavity, makes a most perfect valve.

The lung is compressed and studded throughout with diffused miliary yellow and grey tubercle; at the apex there is a small cavity. Left lung universally and firmly adherent; large cavity at apex, tuberculariz̆ed throughout. Right auricle and ventricle of heart somewhat dilated, and contain imperfectly decolourized, entangled clots. Pulmonary artery measures three inches and three-eighths across the valves. Left cavities nearly empty. Aorta measures across the valves three inches and one eighth. Liver is large, weighing thirty-eight ounces; much hepatic congestion. Spleen normal, not enlarged; its capsule somewhat shrivelled.

Clinical notes.—On the evening of the 29th of March, the patient was seized with sudden agonizing pain in the right side, and great dyspnœa; and he was found by Mr. Murphy (clinical assistant, who has kindly supplied these notes) propped up in bed, with great anxiety of countenance, pallor, frequent catching respiration, and rapid feeble pulse. He complained of severe pain in the right axillary region, and of being unable to get his breath. The right anterior and axillary bases were resonant; respiration inaudible, but much creaking and friction-sounds, extending as high as the nipple; at the posterior base, the same creaking, with some fine rhonchus. The dyspnœa continued to increase. Dr. Quain saw the patient on the 30th, and, from the complete absence of respiration with resonance, diagnosed pneumo-thorax. The right side became more bulged and hyper-resonant, the general symptoms steadily increased, and the patient died early on the morning of the 31st of March.

Remarks.—The interest of this case consists in its illustrating the relation between a very perfectly valvular opening found after death and the absence of amphoric or of any respiration, and the steadily increasing dyspnœa which indicated it during life. The complete absence of respiration and steadily increasing dyspnœa are of the utmost importance in diagnosis, indicating the valvular nature of the opening, and hence pointing to paracentesis as the only means of affording relief. In this case both lungs were known to be so extensively diseased that paracentesis would probably scarcely have prolonged life.

The method of ascertaining the air-pressure within the pleura here adopted is a very convenient one, and it might be used during life in paracentesis, both in pneumo-thorax and fluid effusions, the pressure in both of which have as yet only been ascertained in a very few cases.

Dr. R. Douglas Powell, *5th of May*, 1868.

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20. *Lung and portion of intestines, from a case of chronic phthisis.*

The specimens had been removed from the body of a woman, Margaret D., aged 24, who had been under the care of Dr. Pollock, in the Hospital for Consumption, Brompton, since October, 1867.

Post-mortem examination, thirty hours after death.—Body emaciated; rigor mortis passing off; flattening of the right anterior chest; on removal of the cartilages, right border of the left lung reaches the middle line and arches backwards, opposite third cartilage; anterior border of right lung does not reach beyond the line of junction of the cartilages with the ribs, leaving more of the pericardium exposed than natural. Heart rather large, otherwise normal. Left lung universally adherent; apex firm to feel, and, on section, seen to be much congested, exuding frothy serum. There are, in this portion of lung, some nodules, of the size of a large filbert, one or two near the surface having a firm section, a wavy outline and greyish surface, with several irregularly round bodies, of a cheesy look, but tolerably firm, and having small apertures in their centres (bronchial tubes). The rest of the lung is much congested, and contains numerous scattered horny granulations, both single and in little groups. Pleura considerably thickened, gelatinous; section striated vertically to surface of the lung. Right lung contracted and firmly adherent; pleura thickened, œdematous, gelatinous; section finely striated vertically to surface. At the posterior part of the extreme apex is a cavity the size of a large walnut, sharply defined, communicating with a large bronchus. There are many smaller cavities distributed throughout the lung, of a pyriform shape, terminating at their smaller ends in widened bronchial tubes. Some of these are empty; others contain some softened cheesy matter. Their internal surfaces are apparently continuous with the linings of the bronchi, and present many points of degeneration, and at parts appear eroded. At the extreme base of the lower lobe, at its anterior part, is a large, irregular, trabeculated cavity, having several bronchial tubes opening

into it; its walls are sharply defined and extremely tough and fibrous, being formed below by thickened pleura covering the diaphragm, above by indurated lung-tissue and thickened interlobular pleura, anteriorly by thickened pleura, and posteriorly by indurated lung-tissue. The tissue of the lung is much tougher than natural, and numerous fine bands are seen intersecting one another, most numerous and distinct in the neighbourhood of the thickened partition between the lobes, also directed inwards from the pleural surface. In section are seen numerous semi-transparent horny-looking and opaque points, resembling tubercular granulations; but many of them, on closer examination, are seen to have a small aperture in the centre, and thus appear to be small bronchi with thickened walls. Liver, healthy. Spleen, seat of albuminoid degeneration, in sago-like masses. Kidneys, healthy. There are numerous ulcers in the ileum, the largest being from one inch and a half by seven-eighths; they appear to correspond with Peyer's patches, and have their longest diameter in length of intestines, but the margins are thickened, not undermined; there are transverse rugæ converging to them. The surface of the ulcers is irregular and smooth, with papilliform excrescences or ridges extending in all directions. On the peritoneal surface is some opacity, with numerous flattened prominences, more opaque, and varying in size from a pin's head to a pin's point.

Remarks.—This patient was a servant, and had had a brother, who died of phthisis. She had been ill twelve months before admission on the 25th of October, 1867. She had had a cough for eighteen months before. Her illness and cough had come on very insidiously. Three months before admission there had been streaky hæmoptysis. Expectoration, chiefly mucous and frothy, with some pus; emaciation considerable. She *never* had any diarrhœa. She complained, on admission, of a very troublesome cough, and of pain in left side; indifferent appetite, no dyspepsia. On right side, large fluid gurgling was heard, and posteriorly at the base there was dulness on percussion, and deficient respiration. On the left side, respiration was harsh and blowing, and there was friction at the base. Patient continued in much the same state until she had an acute attack supervening in the left lung, and died on the 21st of March, 1868.

There is a point in this case of much practical interest, viz., the extensive ulceration of the intestines, with the total absence of diarrhœa. I believe this to be not uncommon, having seen several cases of exten-

sive ulceration, with only occasional diarrhœa; and the diarrhœa in cases of phthisis very frequently supervenes upon obstinate constipation, this latter being probably caused directly by the ulceration leading to more or less paralysis of the walls of the intestines, and secondarily, by irritation, to diarrhœa.

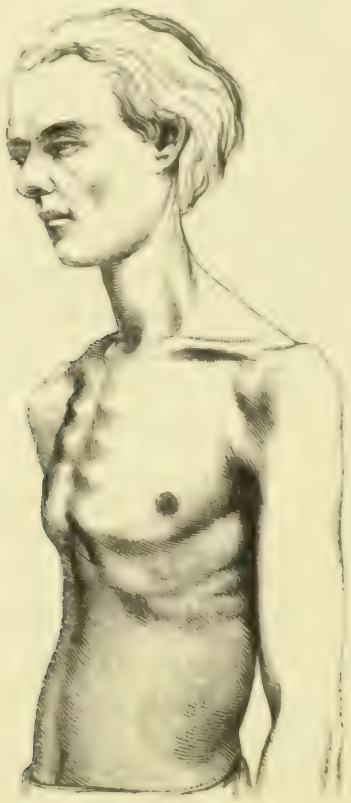
Dr. R. Douglas Powell, *5th of May*, 1868.

21. *Remarkable case of deformed thorax. Motions of the heart distinctly visible beneath the parietes.*

M. B., aged 26, a clerk, became an out-patient at the Middlesex Hospital, under my care, on the 24th of April, 1868. His family history is satisfactory, both his parents and ten brothers and sisters being alive and in good health. He has never had rheumatism, but has been subject to cough and has suffered from dyspnœa as long as he can remember. He is never free from cough in winter, and, though much better in summer, he always, even when at his best, coughs and raises a little opaque mucus on first rising in the morning. The dyspnœa is much increased by exertion, especially by going upstairs, when he often feels as though he would drop down, and suffers from palpitation and from pain shooting through the præcordial region. A very slight cause suffices to give him cold, and his cough and dyspnœa then become more urgent, and are accompanied by wheezing. He has on several occasions had spitting of blood. His pulse averages about 80, is very compressible, and at times dicrotous. His chest is much deformed, presenting the so-called pigeon-breasted shape in an exaggerated degree. (Fig. 5.) The sternum projects forwards in the form of a double keel with a groove in the middle, the right keel being more prominent than the left. Above the second intercostal spaces the chest is flatter and more natural in shape. The lateral parts of the thorax below the nipples are much flattened, and recede rapidly from the front, especially on the right side. The chest-walls are remarkably thin, and the motions of the heart are distinctly visible quite across the thorax from nearly an inch outside the left nipple to a line drawn vertically through the right nipple. The apex of the heart is felt and seen beating below and on the outside of the left nipple in the sixth costal interspace, in which situation a vibration or thrill is perceived by the fingers at the moment of the shock. A distinct shock, synchro-

nous with that below the nipple, is also felt at the xiphoid cartilage. At the moment of the shock, the fourth, fifth, and inner part of the sixth costal interspaces on the left side, and the fifth and sixth interspaces on the right side, are seen to recede, and on application of the fingers the heart may be felt shrinking away from the parietes, and gliding with an undulatory movement slightly upwards in a diagonal direction towards the right. In the right fifth interspace, directly below the nipple, a faint shock is felt immediately before the shrinking away of the heart. The cardiac dulness commences at the border of the fifth rib, and extends vertically to the margin of the ribs, and horizontally from half an inch outside the left nipple across the thorax to the right border of the sternum. Every other part of the chest is resonant on percussion, and particularly the upper part of both mammary regions. A loud, grating, systolic murmur is audible over the cardiac region from the left nipple to the xiphoid cartilage; its point of greatest intensity being near the left border of the sternum, an inch

Woodcut 5



below the nipple. This murmur is also distinctly audible in the axilla and at the lower angle of the left scapula, but on the right side of the sternum it is only faintly heard as from a distance. The respiration is dry and sonorous, and the sound of expiration prolonged. There is deficiency of vocal vibration in the mammary regions. The urine is normal.

Remarks.—I have been unable to ascertain the occurrence of any illness in childhood which could have induced the remarkable deformity of the chest in this patient, but I presume that it was developed after birth, probably in consequence of some catarrhal affection in early life. The case may perhaps be considered of even greater interest in a physiological than in a pathological point of view, but it appears to me to possess sufficient interest in this latter respect to warrant my showing the patient to the Society. It is very rarely that the movements of the heart, and especially the recession of the body of that organ from the thoracic walls at the moment of the shock of the apex against them, can be seen and felt as in this case.

Dr. GREENHOW, *5th of May*, 1868.

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22. *Cancerous (?) ulceration of the larynx, with partial obliteration of the œsophagus.*

Eliza B., aged 36, mother of six children, attended as an out-patient at the London Hospital, at the commencement of the present year, with the following history and symptoms. A year previously to my seeing her, she had an attack of facial erysipelas, which lasted ten weeks and left her very weak. Notwithstanding this weakness, she nursed her baby, and soon afterwards her throat became bad. She complained of "a feeling of large lumps outside the neck when she attempted to swallow." The throat was perpetually dry and smarting. Deglutition was exceedingly difficult and painful, so that she had to confine herself to farinaceous food and fluids. The voice was suppressed and hoarse; there was a frequent loose cough, with constant thick frothy expectoration. There was no history of phthisis, cancer, or syphilis in the family.

On examination externally a very painful and rather hard swelling was discovered deeply seated on the left side in the outer triangle. This swelling, about the size of a nut, was situated at some distance above

the spot where the pain was felt on swallowing. There was no swelling on the right side.

Examination with the laryngoscope showed a large, deep, irregular ulcer, of an ashy-grey colour, on the left arytænoid cartilage. The pharyngeal wall was inflamed, and presented numerous small uneven projections inwards. (Fig. 6.) The patient was admitted into the

Woodcut 6.

London Hospital on the 8th of February, and died on the 7th of March.

Post-mortem examination, thirty hours after death.—A large, deep, irregular, ash-coloured ulcer was found on the left side of the epiglottis, involving the attached portion of the left arytæno-epiglottic fold. The right side of the œsophagus, at its commencement—*i.e.* for an inch below the cricoid cartilage—was completely obliterated, the opposite sides appearing to have become adherent from inflammation. There was no thickening or evidence of inflammation in the neighbourhood.

Dr. Morell Mackenzie, *5th of May*, 1868.

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23. *Laryngeal growths pressing upon the left recurrent laryngeal nerve, and causing paralysis and atrophy of the abductor of the left vocal cord.*

The specimen was taken from a lady, aged 56, sent to me on the 29th of March, 1868, by Dr. Llewellyn Williams.

The symptoms were extreme dyspnœa and stridulous breathing on the slightest exertion. They had first commenced three years before I saw her. At that time she had suffered from a violent croupy cough. It was remarkable that the dyspnœa and stridor ceased when the patient assumed the recumbent posture, and also on going down stairs. During sleep there was not the slightest stridor. Dr. Williams had made a careful laryngoscopic examination before he sent the patient to me, and had noticed that the calibre of the laryngeal canal

was considerably diminished, and that the area of the glottis was of unequal size, on contrasting the right side with the left.

Having myself examined her with the laryngoscope, I was enabled to confirm this observation, and found that on inspiration the left vocal cord was not properly abducted, but remained near the median line, presenting a peculiar curved free border. (Fig 7.)

Woodcut 7.

She complained of a slight tickling cough. Pulse, 80, and feeble; respirations, 20; urine, natural; bowels, regular; appetite, good; tongue, clean; thorax, equally resonant on both sides; slight prolongation of respiratory murmur on the left side. No aneurysmal tumour, which might have pressed on the recurrent laryngeal nerve of the side affected, could be discovered. The heart-sounds were very feeble.

The dyspnœa being very considerable, I recommended tracheotomy, and this operation was performed on the 17th of April, by my colleague, Mr. Cowper, of the London Hospital. Not more than a drachm or two of blood was lost in the operation, but the patient did not appear much relieved by it. She seemed, however, to be doing well till the 21st, when a sudden and most severe paroxysm of dyspnœa came on. She became perfectly livid and slightly convulsed; the paroxysm lasted several hours, and was followed by another, after an interval of three hours.

Dr. Hyde Salter saw the patient with me when she was just recovering from the second attack. He agreed with me in considering the attack under which she was then suffering, to be one of pure asthma.

The next day the patient was a little better. On the 27th she had a recurrence of the asthma, and died on the 28th, at the termination of a severe paroxysm.

Post-mortem examination, thirty-six hours after death, revealed a number of small tumours growing outside, and projecting into the cavity of the windpipe, midway between the larynx and the bifurcation of the trachea. In one of these, three-quarters of an inch long by a quarter of an inch in breadth, the left recurrent nerve was completely embedded;

and as it emerged, it was seen to be red and inflamed. The left abductor *(crico-arytænoideus posticus)* was found to be pale and atrophied. On microscopical examination, its fibres were seen to have undergone complete fatty degeneration. No other muscle was unhealthy. The walls of the heart were exceedingly soft and thin, the right auricle so much so that it was accidentally ruptured in removal.

There were altogether four distinct tumours. A portion of the one in which the nerve was embedded was kindly examined and thus described by Dr. Fenwick: "The hard tumour seems to consist of a *striped* muscular tissue, enveloped in connective tissue and cells. The muscular fibres are disposed irregularly and vary greatly in size and shape; some at the edge of the preparation are well marked; those placed more internally are much more narrow, and so indistinct that it is difficult to recognize their real nature." On the right side, external to the trachea, was a small cystic tumour, made up of epithelial cells, enclosed in enlarged gland-tubes of various shapes and sizes, the cells presenting no appearance of malignant disease, and the basement membrane being distinct, and in many parts thickened. This tumour did not in any way involve the right recurrent nerve. The fluid contained in it was of a sebaceous character. In addition to these there were two small round growths projecting into the tracheal canal, "of a similar nature to the last, but probably older, the glands being less distinctly marked, and more fused together."

With the exception of the tumour in which the nerve was involved, the remaining growths, although they could be divided into several tumours, appeared to be conglomerated.

Dr. Morell Mackenzie, 19*th of May*, 1868.

Report on Dr. Morell Mackenzie's specimen of laryngeal growths pressing upon the left recurrent laryngeal nerve, by the Committee on Morbid Growths.—We have examined Dr. M. Mackenzie's tracheal tumour, and beg to report that we agree generally in his description of its microscopical structure; that we found striped muscular fibre in the outer portion of its left lateral division; but that we found none in the interior of the tumour or on the inner surface of any part of it. We believe that the muscular fibres were derived from the muscle in contact with and partly involved in the outer surface of the growth.

1*st of June*, 1868.

21. *Laryngeal tumour, existing nine years, removed by the laryngeal écraseur.*

The subject of this tumour in the larynx was a gentleman, aged 42, who consulted me on the 1st of June, 1867, for his throat and a cough. Nine years before, he caught a severe cold, and had an attack of laryngitis and bronchitis combined. He lost his voice and recovered it again, but he remained hoarse ever since, with frequent absence of the voice for weeks at a time. He had also a more or less persistent cough, especially troublesome every winter. There was no history of consumption in the family. He had lost no flesh, and could eat his food with a good appetite. He had an almost constant desire to clear the throat, as if there was a particle of phlegm to get rid of. He never had syphilis, nor was he subject to gout or rheumatism. He purposed passing a few months on the Continent.

On examining the throat, the fauces were found to be capacious and healthy, though a little congested. In the laryngeal mirror the epiglottis was seen to be healthy and in its natural position. On the free border of the right vocal cord, at its middle, was a tolerably large growth, which was compressed between the two cords when the glottis closed. Its pedicle at first seemed large, but I made out at last that it was comparatively small. There was no other disease of the larynx, and this was the first time he had been examined with the laryngoscope, although he had consulted many persons, whose enquiries were directed towards his chest. The most careful examination of the chest failed to discover any evidence of disease; it was well formed, and nothing abnormal was heard. On explaining the nature of his disease, the patient made up his mind to have nothing done until after his return from the Continent.

November 30th.—He presented himself to-day, and I succeeded in snaring the growth in the wire-loop of my laryngeal écraseur; on the *very first introduction* of the instrument, the wire was pulled home, the pedicle severed, and the tumour was withdrawn within the grasp of the loop of wire, its meshes of divided mucous membrane being firmly held by it. There was scarcely a drop of blood lost from the small wound. The voice immediately improved in its tone, the hoarseness disappearing, but with a laryngeal twang about it. The growth was of the size of a small roundish bean, with a number of little rod-shaped processes upon its surfaces.

On the 2nd of December, I took the growth to Dr. Beale, who cut

off a fragment for microscopical examination; and next day, on seeing my patient, I found the right vocal cord looking quite healthy; the glottis was even, both cords symmetrical, and the voice was smooth and natural in its tone. On the 10th, he seemed quite well in every respect.

January 11th, 1868.—He has remained free from hoarseness and irritation, and the old sensation to get rid of phlegm has quite gone; he looks stouter and is in capital health.

On seeing him on the 23rd of May, I learnt that he had passed the winter free from cough or any inconvenience whatsoever. His voice was natural, and the larynx quite healthy; the right vocal cord was healthy, and showed no trace even of the pedicle.

As Dr. Beale has not yet furnished me with an account of the nature of the growth, I have only to say that it partook of the usual structure of similar tumours from the larynx, being for the most part composed of epithelial scales.

Sir Duncan Gibb, *19th of May*, 1868.

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25. *Exfoliations from the thyroid cartilage, chiefly composed of the phosphate of lime.*

The diagnosis of the true nature of the disease which gave rise to the expectoration of the chalky-looking bodies in the following case, was a matter of considerable importance; indeed, the patient's friends were very anxious respecting it, as several cases of pulmonary phthisis had occurred in the family.

Mr. W. E. L., aged 28, was sent up to me in August, 1867, by Mr. John C. Lindop, surgeon, of Newport, Salop, for my opinion regarding the state of his throat and larynx. The complexion was somewhat sallow, and unhealthy-looking, but it was natural to him. He was not subject to any cough, and his general health was tolerably good, with the exception of a cold he had had in the previous October. His family, and especially his parents, he stated, were very healthy. He himself played much at cricket, and had not been subject at any time to rheumatism or gout.

About the middle of June, 1867, he experienced considerable irritation about the throat and larynx, associated with a very disagreeable taste in the mouth. He coughed violently at times, and at first it was believed that he had an attack of pertussis; the voice was decidedly husky,

and he had to hem frequently to clear the throat. The irritation in the throat appeared to give rise to the cough; and on two occasions, with some effort, he expectorated some highly offensive hard bodies, which, on washing, had the appearance of chalky or calcareous concretions; they were irregular in shape, and the largest weighed about ten or twelve grains. The symptoms, which had existed for ten days, subsided after the expectoration of the second concretion; but still a little irritation remained when I submitted the larynx to examination with the laryngoscope. Some slight irritability of the fauces was present; the soft palate and uvula were rather vascular, and the mucous membrane relaxed. Slight swelling and redness were observable on the inner side of the right wing of the thyroid cartilage, with a slight depression in the centre, as if the remains of an opening through which something had extruded. There was no other visible disease within the larynx or the trachea, and the vocal cords were perfectly healthy; indeed, his voice was good and clear. No tenderness or inequality of surface was manifest in the cartilages in the neck; and as the most careful examination of the chest satisfied me that the lungs were healthy, I had no hesitation in coming to the conclusion that suppuration had occurred on the inner surface of the right wing of the thyroid cartilage, close to its upper border, the result of some inflammatory process, and that portions of the ossified cartilage, which in consequence became detached, were extruded and got rid of. The bodies were submitted to chemical analysis by my colleague, Dr. Dupré, who found a hundred parts to yield the following results :—

Moisture - - - -	1.76
Organic matter - - -	12.37
Phosphate of lime - - -	57.84
Carbonate of lime, phosphate of iron, silica, and other mineral salts -	28.03
	100.00

They contained no uric acid, a point on which I was anxious, from the suspicion of gout engendered by the patient's unhealthy and sallow appearance.

Under a little mild treatment the larynx recovered its natural condition. On communicating my opinion to Mr. Lindop, I gleaned the additional information, that his patient had had a severe fall from his horse two years and a half before, when he was thrown with great violence on to his head. He suffered from concussion of the brain, and a

day or two after the accident he complained of great pain in the throat, especially near the pomum Adami, attended with difficulty of swallowing. Mr. Lindop, who attended him at the time, recollected very well telling him that he thought the laryngeal cartilages were crushed by the pressure of the chin abruptly against the sternum.

The above particulars left no doubt in my mind of the true nature of the case, which, with the analysis of the little bodies, confirmed the view that the seat of the original mischief was the spot where they were extruded. The analysis corresponded with that of calcified cartilage, but with a very large proportion of phosphate of lime. I am disposed to believe that, in the first instance, the force of pressure at the time of the accident was exerted between the right horn of the hyoid bone and the corresponding part of the thyroid cartilage, so injuring the latter as to give rise to a deposit of earthy salts, and at a later period to exfoliation of imperfectly nourished material.

Sir Duncan Gibb, 19*th of May*, 1868.

III.—DISEASES, ETC., OF THE ORGANS OF CIRCULATION.

1. *Softening clots in the heart, in a case of renal disease.*

M. H., a widow, was admitted into the hospital, under my care, on the 6th of May, 1867. She stated that she had been perfectly well up to three weeks ago; that at that time she got wet through, and that she was attacked on the following day with swelling of the feet and legs, shortness of breath, and cough. Since then she has rapidly got worse, and has lost both appetite and strength. She has passed little water.

On admission she seemed extremely ill. There was orthopnœa, with cough; slight œdema of the legs; furred tongue, and loss of appetite. The pulse was 144 in the minute, but regular; the heart's sounds were healthy; the chest was resonant, but the breath-sounds were attended here and there with rhonchus; urine scanty, high coloured, specific gravity 1017, and slightly albuminous. During the next few days she improved a little in her general condition; but about the 10th or 11th, she began to expectorate blood mixed with bronchial mucus; and, indeed, altogether she spat a good deal of blood. The only local sign indicative of lung-affection was smallish crepitation at both bases. The pulse varied from 120 to 164; the urine, which was of a tolerably high specific gravity, continued to con-

tain albumen, and presented, under the microscope, transparent fibrinous casts. She began to sleep better at night, her tongue got clear, and her appetite improved. She became almost suddenly worse about the 23rd, and appeared on the 24th to be sinking; she was then exceedingly feeble, was rambling and incoherent; her pulse at the wrist was imperceptible, and the heart's action exceedingly rapid, though quite regular. She continued in much the same condition for about a week, and I was daily expecting her death. During this time she was in a constant state of low delirium, answering, however, pretty correctly when addressed. The œdema increased somewhat, and the hands and feet became cold and livid; a small circumscribed ecchymosis appeared at the extreme tip of the nose; the cough almost entirely disappeared, though the respiration was still very rapid; there was some crepitation at the bases of the lungs, but the chest was resonant, and the air penetrated everywhere; the pulse was for the most part imperceptible; and the heart-sounds, though feeble and rapid, were regular and free from murmur. The bowels were pretty regular; the urine very scanty, and albuminous. For a few days her tongue was aphthous. About the 1st or 2nd of June she began to improve; and on the 4th it was noticed that she had not rambled during the previous few nights, and that she had been able to lie down; that her tongue was pretty clean and moist; that her appetite was returning; that she had little cough; and that her pulse, though extremely weak and about 124, was perceptible at the wrist. She was, however, still exceedingly feeble, and her legs were much swollen. In this improved condition she remained up to about the 18th of June; and during this time the ecchymosed patch at the tip of the nose exfoliated. On the 18th, she appeared somewhat worse than she had been; and by the 21st she was in much the same state that she had been in some three or four weeks previously. She was in a condition of quiet delirium, dozing constantly as she sat in bed; her pulse was almost imperceptible, and her extremities cold; her breathing was short and quick, but there was little or no cough. There was no further rallying; but she remained in nearly the same condition up to her death, which took place on the 14th of July.

During the latter part of her illness, the anasarca increased somewhat, and superficial sloughs appeared on the legs. The heart's sounds continued healthy, and its action regular; and the urine, which was still scanty, maintained a specific gravity of about 1015 or 1016, and a highly albuminous condition. She had little cough from the end of May, and spat no blood.

Post-mortem examination.—The body was generally œdematous, especially the lower extremities; there was some superficial sloughy ulceration on the back of the left thigh and leg, and a bed-sore behind the right buttock.

Chest. Each pleura contained about three-quarters of a pint of dark-coloured serum. The general tissue of the lungs was œdematous, but in other respects healthy. At the lower part of both lungs was a large well-defined patch of consolidation, granular on section, of a reddish-buff colour, very firm, and bounded by a thin, dark, crenated line. In the consolidated patch on the left side were one or two cavities, with ill-defined walls, and containing sloughy tissue. The heart was enlarged, especially on the right side, pale, and easily torn. The cavities contained large unadherent clots, those on the right side being partially decolourized. At the apex of the left ventricle were several rounded softening clots, varying from the size of a Spanish-nut downwards. These were smooth on the surface, softened within into a creamy pulp, and attached to the parietes by means of processes prolonged beneath the columnæ carneæ. In one or two spots, portions of clot connected with these, and forming a thin lamina adherent to the lining membrane of the heart, presented a bright yellow-ochre tint, and were found, under the microscope, to contain, in addition to other elements of disintegrated blood, numberless ruby-coloured rhomboidal crystals (hæmatoid crystals). A few smaller but similar clots were found at the apex of the right ventricle. There was a little atheromatous deposit in the mitral valve, but the valve was quite competent. The right kidney was reduced to the size of a hen's egg, and its substance was riddled with numerous cysts of various sizes. Its cortex was much reduced in thickness. The left kidney was enlarged, but in other respects like its fellow. The other abdominal organs were healthy, or nearly so.

Remarks.—The above case was no doubt essentially one of chronic renal disease, in which special symptoms had shown themselves suddenly, after exposure to weather. At the same time it was one of those complex cases, in which the symptoms present might almost equally be ascribed to heart, or lung, or kidney-disease, and where, in fact, all those organs had become implicated either functionally or by actual structural change. The case was, however, brought before the Society chiefly because it furnished an example of the formation of clots in the cavities of the heart some considerable time anterior to death;

and because it at the same time presented such conditions during life as enabled me to foretell several weeks before her death that softening clots would probably be discovered in the heart. The conditions referred to were the presence of the disease or diseases under which it was ascertained that she was labouring, the remarkable feebleness of circulation manifested by the pulse, the lividity and coldness of her extremities and of her nose, and the occurrence of that state of impending death, out of which she rallied some six or seven weeks before actual death took place. For further remarks on this subject I may refer to papers of mine on softening clots in the seventh and fourteenth volumes of our *Transactions*. It may be worth while to point out that, though in this case clots formed in the heart during life, the formation was not attended with any of the symptoms to which the formation of *ante-mortem* cardiac clots have been lately assumed to give rise.

Dr. J. S. Bristowe, *15th of October*, 1867.

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2. *Case of suspected innominate aneurysm; ligature of subclavian and common carotid arteries.*

The specimen exhibited was a small aneurysm, involving the arch of the aorta and the root of the innominate artery slightly. The patient, aged 37, was in the London Hospital, under the care of Dr. Davies and Dr. Sutton; and as the disease progressed, the tumour threatening to burst externally, the above arteries were tied by Mr. Maunder, on the 18th of September, 1867; the former in its third part, the latter necessarily high up. The agonizing pain long experienced about the shoulder, was removed by the operation. The patient expired on the sixth day; and, on examination, the aneurysmal sac was found full of recent clot, and continuous with this was a coagulum, filling and choking the arch of the aorta and extending between the heart and the seat of communication of the aneurysm with the aorta.

Remarks.—It may be surmised that, had the aperture of communication between the aorta and the aneurysm not exceeded in size that of the innominate artery, the channel of the aorta would have remained open. Mr. C. F. Maunder, *5th of November*, 1867.

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3. *Case of inguinal aneurysm, for which the common iliac artery was tied.*

The subject of this disease was 40 years of age; and, besides the aneurysm, involving the external iliac and common femoral arteries, Dr. Sutton diagnosed a large heart and regurgitant aortic disease. The superficial veins of the whole lower extremity were greatly distended, and an ulcer on the leg, from which he had once nearly bled to death, existed. The right common iliac artery was ligatured about its middle, on the 21st of September, 1867. The patient died with gangrene of the whole limb on the seventh day.

At a *post-mortem* examination, the aneurysm was filled with clot, and the arterial system generally was atheromatous. The external iliac vein, opposite the site of the aneurysm, was obliterated.

Mr. C. F. Maunder, *5th of November*, 1867.

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4. *Aortic valve disease, apparently caused by syphilis.*

A merchant, 30 years of age, consulted me in January, 1865, on account of general debility. His aspect was pale and very cachectic. About a year and a half previously he had been under the care of Mr. Barnard Holt, for constitutional syphilis. There was no rheumatic history, and there were no indications of disease of the heart.

I next saw the patient in April, 1867, when he complained of cough, palpitation of the heart, and great irritability of the stomach. Both sounds of the heart had been replaced by murmurs; they were heard most distinctly at the base, and could be traced in the track of the aorta. Permanent patency of the aortic valve was diagnosed. The liver was enlarged, and tender on pressure, and the lower limbs were very œdematous. He improved from this condition; but on the 10th of May, when I saw him in consultation with Mr. Iliff, of Kennington, the disease was evidently making rapid strides, and he died on the 3rd of the succeeding month.

An examination of the body was made by Mr. Iliff and myself. There was excessive œdema of the lower limbs. The cicatrix of a bubo was observed in the left groin. The heart was greatly enlarged; its left ventricle was hypertrophied, and dilated to four or five times its natural dimensions.

On slitting open the aorta, a well-defined, elevated, condylomatous-like mass, the size of a sixpence, was seen projecting from the posterior part

of the vessel, just above the valve. Its surface was smooth and unbroken, its substance firm, and its colour yellowish, so that it contrasted strongly with the surrounding surface of the vessel. Exactly opposite to this there was a patch the size of a shilling, which, although evidently of the same origin, now presented an ulcerated surface, with raised and ragged edges. A few very small calcified plates were felt on the broken surface. The ulceration was traced from this patch downward to the point of attachment of one of the segments of the valve, and extending from this it had destroyed about one-third of the adjacent part of this segment. The result of this was, that, from want of support, the remainder of the segment had fallen down into the ventricles, and was the cause of great leakage. It was remarked, too, that this segment was, at its other extremity, united to a small extent (perhaps congenitally) with the adjoining segment. A microscopic examination of the diseased structure showed it to be closely fibrillated, and to contain many oil-globules.

Although there can be little doubt that the cachexia which preceded the development of the cardiac symptoms was due to syphilis, it is to be regretted that fuller information in reference to this disease was not obtainable, and also that opportunity did not allow of a complete examination of the viscera. Whether or not the deposits in the aorta were of a specific nature rested in a large degree on their physical qualities. The tubercle or condylomatous-like mass was certainly a very unusual appearance in that locality. The patient had not had rheumatism, and the erosion or ulceration, by which the valve was rendered incompetent, as seen by its ragged edges, was altogether different from the puckering caused by endocardial inflammation. The age of the patient did not favour the idea that the deposits were of an atheromatous nature, nor did their appearance bear this out. On the other hand, the rapid development of cardiac symptoms, the appearance of the morbid parts, and the ulceration of the valve, taken in connection with the fact that the patient had suffered severely from constitutional syphilis, afford together strong evidence that the valvular disease was caused by a specific affection, which has already been traced in almost every organ of the body. The appearance of the tubercle has unfortunately been entirely changed by the spirit.

Dr. Leared, *5th of November*, 1868.

Report on Dr. Leared's case of syphilitic disease of the aorta.—The elevation on the posterior wall of the aorta presented the following characters: It was of an irregularly round shape, nearly an inch in diameter,

and of opaque-yellow colour, and it projected considerably above the surface; the lining membrane of the artery could be traced over it, and be peeled off it with a pair of forceps. On making a section through it, it was found to be of firm consistence and opaque yellow colour, and in its centre was a small cavity containing a milky fluid, which, on microscopical examination, was seen to consist of oil-globules, granular débris, and large numbers of crystals of cholesterine. Behind, the mass was bounded by the elastic coat of the artery, with which it was continuous. Its thickness in the centre was three lines. On microscopical examination, it presented a fibrillated structure, devoid of nuclear or cellular elements, the fibrils being interspersed with oil-globules and granules, and, towards the cavity, also mixed up with crystals of cholesterine; for the most part they had a parallel direction, but different planes crossed each other; more deeply, they were intermixed with the elastic fibres of the middle coat, among which oil-globules were also found. The morbid growth would therefore appear to have the characters usually met with in atheromatous deposits, from which it differs mainly in its unusual thickness.

Dr. J. B. Sanderson,
Dr. W. Cayley, *19th of November*, 1868.

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5. *Two cases of free communication between the auricles, by deficiency of the upper part of the septum auricularum. From cases aged* 52 *and* 6 *respectively. No cyanosis.*

The first heart (Plate V., figs. 1 and 2) was taken from the body of a woman, aged 52, who died in St. Thomas's Hospital, under the care of Dr. Bristowe, after an attack of acute pericarditis, lasting thirteen days. There was no history of any cyanosis, and the body gave evidence of having been well nourished. The heart-sounds were reported to have been indistinct, owing to the presence of a large amount of effusion in the pericardium; but, beyond the present pericarditis and some consolidation in the lower part of the left lung, there was no evidence of any abnormal condition or disease detected in any organ during life.

On examining the auricular septum after death, it was found that a large aperture existed in its upper part, directly below the entrance of the superior vena cava, and about one inch in its transverse diameter. The lining membrane of one auricle could be traced, continuing smoothly over that edge of the septum which formed the margin of the opening,

DESCRIPTION OF PLATE V.

This Plate illustrates Mr. W. W. Wagstaffe's description of two Cases of Free Communication between the Auricles, owing to deficiency of the upper part of the Septum Auricularum. From drawings by Mr. W. W. Wagstaffe (p. 96).

Fig. 1 is the posterior view of the heart of a woman aged 52. *a*, Aorta; *b*, pulmonary artery; *c*, portion of auricular wall cut away and including the orifices of the superior cava and right pulmonary veins; *d*, inferior cava; *e*, left pulmonary veins.

Fig. 2. Side view of septum of same heart. *a*, Fossa ovalis.

Fig. 3. Posterior view of heart of a child aged 6. *a*, Aorta, with right subclavian and carotid arteries arising separately; *b*, pulmonary arteries; *c*, superior vena cava; *d*, inferior vena cava; *e*, cavities of auricles laid open by removal of portions of their walls.

Fig. 4. Side view of septum of heart represented in fig. 3.

Fig. 1.

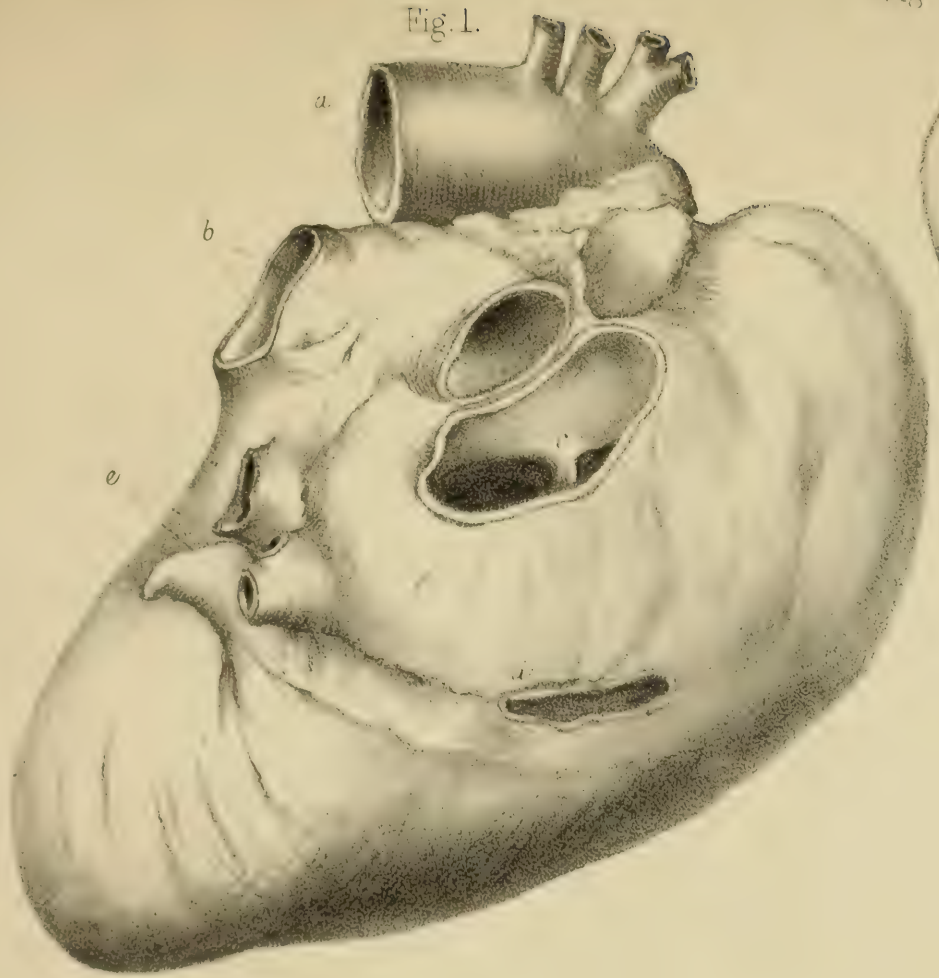

Fig. 2

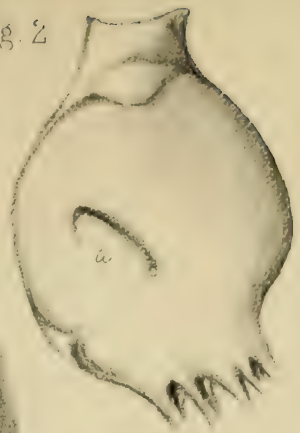

Fig. 3.

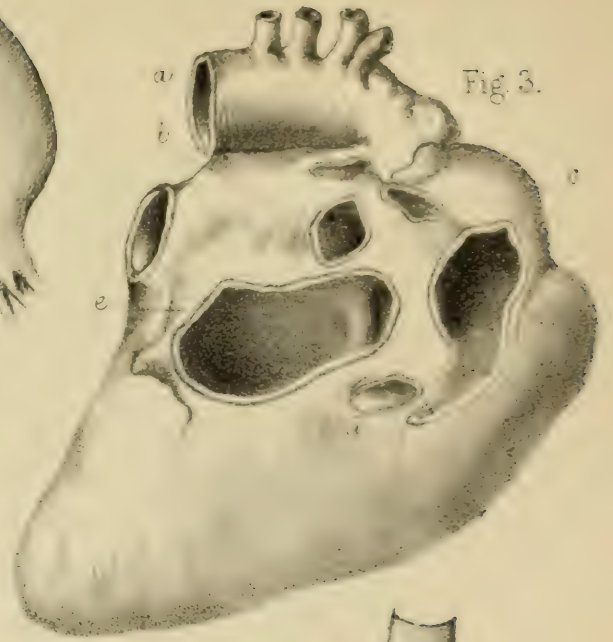

Fig 4.

W.W. Wagstaffe del. R. Morgan sc.

and was in this manner directly continuous with the lining membrane of the other auricle. The circumference of the aperture was regular and unbroken, and showed no signs of previous disease; the edge of the septum, too, was abrupt, and not by any means thinned. In other respects, the heart was considerably diseased, but was not the subject of fœtal malformation. Its weight, when cleared of clot, was twenty-six ounces and a half. The mitral orifice was contracted and very firm, admitting only the tip of one finger. The aortic opening was also contracted to the same dimensions. On the right side, however, the auriculo-ventricular opening was greatly dilated and admitted the tips of eight fingers, and the orifice of the pulmonary artery was sufficiently enlarged to admit the tips of three fingers. With regard to the cavities, the right auricle was enormously dilated, so that it would contain an ordinary fist, and its walls were somewhat thickened. The left ventricle was also greatly dilated. On the right side, both auricle and ventricle appeared of ordinary size and thickness. The muscular structure was in a state of fatty degeneration in each ventricle, but the transverse striation was not completely lost. The lining membrane appeared healthy, and the foramen ovale and ductus arteriosus were perfectly closed. Thus, in addition to the deficiency in the septum of the auricles, the abnormal conditions in the heart were: (*a*) dilatation of right auricle, right auriculo-ventricular opening, right ventricle, and orifice of pulmonary artery; (*b*) contraction of mitral and aortic orifices. In removing the heart from the thorax, before the abnormal condition of the septum was discovered, a portion of the wall of the auricle was left behind, including the orifices of entrance of the superior vena cava and the right pulmonary veins; but whether these vessels communicated with one another before entering the heart, or, as is more probable, entered side by side just over the aperture in the septum, could not be satisfactorily determined. However this may have been, it is curious that there was no sufficient admixture of the venous and arterial blood to interfere with its oxygenation and the nutrition of the body.

The other specimen (Plate V., figs. 3 and 4) is an almost exactly similar one, and belongs to the museum of St. Thomas's Hospital. It was taken from a child six years old, who died of scarlet fever, and who, during life, never exhibited any indication of cyanosis, but in whom a loud systolic bruit was audible over the whole chest. This heart is preternaturally large, especially in its right cavities. An opening nearly circular in form, and six lines in diameter, exists at the upper

part of the septum auricularum, above the foramen ovale, leading, as in the previous case, directly from one into the other auricle. The foramen ovale is open, but the passage is so oblique and valvular as not to have allowed the transit of blood. The tricuspid and mitral valves are slightly thickened. In this specimen another malformation existed in the right subclavian and carotid, arising separately from the arch of the aorta. Mr. W. W. Wagstaffe, *5th of November*, 1867.

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6. *Aneurysm of the aorta, pressing on pneumogastric and phrenic nerves.*

S. K., aged 40 years, a labourer, but previously for nearly eight years in the army, in which he served in the Mediterranean, and from which he was invalided two years ago, was admitted into St. Thomas's Hospital on the 21st of June, 1867. He stated that, eleven or twelve months before, he had been taken with pain at the lower part of the sternum, extending up to the shoulder and to the left back, with beating of the heart, especially on exertion, and some cough and expectoration, but without any marked difficulty of breathing or spitting of blood. He had never been intemperate, and he had had no serious illness except small-pox, but he had suffered from an affection of the left leg, brought on by exposure to cold in the camp at Gibraltar. He complained when admitted of pains at the upper part of the front of the chest, extending to the left shoulder and all over the left side and back, with cough, expectoration, and palpitation; and there was entire dulness on percussion over a large space beneath the left clavicle, with impairment of movement and increased fulness there, and this space was separated by a distinct line of resonance from the cardiac dulness. A very marked heaving impulse was felt in this situation, and the arterial sounds were loudly heard. The cardiac sounds were somewhat noisy, but without murmur. There was no obvious fulness above the left clavicle. The left radial pulse was somewhat smaller than the right. The respiratory sounds were rather feebly audible on the left side, but there was no stridor. He had no difficulty in swallowing, but his voice was rather feeble and shrill. He was directed to have an anodyne and expectorant mixture, with an occasional alterative pill, and to be kept in bed

On the 22nd of July, he had continued much in the same way, except that for the last ten days or a fortnight he had suffered more from cough, and the cough and voice had been of a decided laryngeal character. He complained of severe pain extending from the left mammary region through to the back, and occasionally he had difficulty in swallowing food,

and sometimes retching and sickness independently of food. The prominence beneath the left clavicle was becoming more decided, the heaving impulse was more marked, and the left pulse was decidedly smaller and feebler than the right. The impulse of the heart was less than that of the tumour. The sounds of the heart were natural, except that the first was somewhat rough, and the second of a double character. Both pupils were small, and there was no difference between them. The air did not enter very freely into the posterior part of the lungs, and the respiratory sound on the left side was harsh and prolonged. He had less cough, but expectorated a considerable quantity of muco-purulent matter, which, however, never presented any appearance of blood. He was otherwise in fair health. He had latterly been taking one-sixth of a grain of morph. hydrochl., and four grains of extract of hyoscyanus every night.

August 12th. He continued in the same state, but did not complain so much of the pains in the chest, and he especially suffered from pain across the loins. The cough upon the whole was better; the expectoration was scanty and consisted of viscid mucus more or less tinged with blood. The difference between the pulse in the right and left radial arteries continued. The respiration was rapid, irregular, and attended with sibilant rhonchus in front, and was stridulous behind. The voice and cough had the same laryngeal character.

On the 19th of August, the disease was evidently making progress, and the symptoms were becoming more urgent. He had great difficulty in expectorating, and the phlegm which was brought up was viscid, massive, and tinged with blood. He had also some difficulty in swallowing, and said that the food seemed to go down to behind the middle of the sternum, and could not be got farther without difficulty. His breathing was attended with a loud wheeze, and his voice and cough were abortive. The veins above the left clavicle were very much distended, and the difference between the two radial pulses was more decided. The breathing was markedly stridulous, as heard between the scapulæ posteriorly. The sounds of the heart and those heard over the tumour, continued as before. From this time the evidences of obstruction rapidly increased, and he died on the 21st.

The *post-mortem* examination was made by Mr. Wagstaffe on the 22nd of August. The aneurysm was found to project from the front of the transverse portion of the arch of the aorta, and it was about equal in size to a cricket-ball. It had displaced the apex of the left lung, and lay rather on the left side of the spine, which was at this point slightly curved to the right. The œsophagus was considerably compressed between

the aneurysm and the spine, but was not otherwise diseased. The left lung, where it was in apposition with the aneurysm, was inseparably adherent to the tumour, and completely collapsed. The left pneumogastric nerve was traced on to the tumour, and was lost in its walls for a space of about three or four inches, but beyond this point was again traceable to the œsophagus. The origin of the left recurrent laryngeal nerve could not be seen, as it was probably incorporated with the walls of the aneurysm; but the course of the nerve was traceable above the tumour, and it appeared to be of normal size. The left phrenic nerve was also lost on the anterior surface of the tumour, for about two or three inches.

The aneurysm apparently implicated chiefly the anterior wall of the vessel. The interior was smooth, and contained a little loose clot. The vessels arising from the arch were pervious, but the internal mammary artery of the left side was compressed by the tumour, and obliterated. The left brachio-cephalic vein was also nearly closed by firm organized clot, a small canal, which would only admit the end of a small blow-pipe, being left open at the upper part. The pericardium was entirely attached by adhesions, which could with difficulty be broken down by the finger. The right cavities of the heart contained clot, but those of the left side were nearly empty. The organ was not apparently diseased. The larynx and trachea were healthy; the bronchi were much thickened, and contained some mucus. The lower part of the right lung was solidified over a space of about the size of a crown-piece, and the adjacent portions were imperfectly filled with air. The apex of the left lung was closely attached to the aneurysmal sac, and the lower part adhered very firmly to the pericardium. The tissue of the lung was moderately distended with air. The bronchial glands were enlarged, firm, and infiltrated with the ordinary black pigment. The brain and its membranes and the abdominal viscera were healthy. Dr. Peacock, 19*th of November*, 1867.

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7. *Disease of the aortic and mitral valves; rupture of one of the aortic valves. Death from rupture of the right ventricle, and escape of blood into the pericardium.*

John W., aged 45, musician, was admitted into the Middlesex Hospital, under my care, on the 9th of September, 1867. Eight years before, he had been laid up for a fortnight with a slight attack of rheumatism, and since then he had suffered from palpitations, but only after great exertion. He had been in the habit of drinking a

great deal of beer, but, with the exception mentioned, he had enjoyed good health until six months before admission, when he became weak and unable to bear any excitement, while the palpitations increased and he had a cough with expectoration. A fortnight before admission, his legs began to swell and his urine became scanty and dark, and for the last week he had complained of pains in the loins.

On admission, the patient had a pasty anæmic countenance, and slight œdema of the feet, legs, and trunk. Pulse, 124, small and feeble, but regular; arterial pulsation unusually distinct. Pain and palpitation in cardiac region. Impulse between fifth and sixth ribs feeble, and with slight thrill. Cardiac dulness apparently increased, but could not be defined towards the left from dulness over lung. Systolic bellows-murmur at apex and along left margin, and a diastolic bellows-murmur over third left costal cartilage, propagated down along sternum, but not audible below clavicles. Respirations, 36, slightly laboured, and mainly abdominal. All the signs of fluid effusion in the lower half of the left pleura, and pleuritic friction in left axillary region. Coarse crepitus, but no dulness, at base of right lung. Micturition frequent; urine scanty and smoky, and contained about a third (in volume) of albumen, and also epithelial and blood-casts. Tongue moist; breath very offensive; no vomiting; bowels confined.

The patient was treated with purgatives and diaphoretics, and subsequently with iron, digitalis, and saline diuretics, and dry cupping over the kidneys; but the effusion in the left pleura increased, so that the heart's apex became displaced to the right, and, on the 18th of September, slight ascites was detected. On the 1st of October, the dulness on percussion had extended over the lower two-thirds of the left lung, and there was also dulness, with other signs of pleuritic effusion, over the lower third of the right lung, while the anasarca of the lower extremities was increasing. On the 9th of October, the albumen in the urine had increased to three-fifths; and it was noted that the patient had very restless nights. From the 25th of September to the 11th of October, the pulse had a full, bounding character, suddenly collapsing after each beat; but on the latter date it again became small and feeble, and about the same time the patient began to suffer from occasional attacks of vertigo and dyspnœa. On the 28th of October, there was œdema of the right arm, and although the dulness over the left lung had diminished, the anasarca of the legs and genitals had increased to such an extent that it was necessary to have recourse to acupunctures. A large quantity of serous fluid oozed

away from the punctures, and the anasarca was greatly reduced; but the patient became weaker, and the integuments sloughed round the punctures in the right leg. It was noticed also that the slightest motion brought on severe palpitation of the heart. The patient's mind, however, remained clear, and on the 3rd of November he appeared no worse. At two p.m. on this day, while sitting up talking to the patient in the next bed, he became suddenly faint and very pale, and fell back in bed, dead. The respirations continued for at least a minute after the heart could be felt to beat.

On *post-mortem* examination, the pericardium was found to be greatly distended with eighteen fluid ounces of blood, which had escaped by a rupture about two lines in length, in the right ventricle, situated on its anterior wall near the septum, and running obliquely inwards. The heart weighed seventeen ounces; its muscular substance was pale and flabby, and the fibres at many places, but particularly in the neighbourhood of the rupture, where the walls were also thin, were in a state of granular degeneration. There was extensive disease of the aortic valves, one of which was ruptured, so as to cause great incompetence. There were also several large vegetations on the mitral valves. Each pleura contained about thirty ounces of serous fluid, and the lower lobes of both lungs were collapsed. There were about three pints of serum in the peritoneum. The liver was much congested, and weighed seventy-two ounces; and the spleen was about three times its normal size, and contained a recent infarctus. Both kidneys were enlarged by about one-third; their surfaces were smooth, the capsules non-adherent, the cortices hypertrophied and opaque, and the uriniferous tubes full of granular, and in some places oily, epithelium.

Dr. MURCHISON, 19*th of November*, 1867.

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8. *Aneurysm of the left middle cerebral artery.*

The specimen consisted of the greater part of a brain, with its membranes and vessels attached, showing an aneurysm on the middle cerebral artery of the left side, close to its origin from the carotid. The size of the tumour was about that of a small hen's egg. It lay in the fissure of Sylvius, partly sunk in a depression of the anterior lobe of the brain, just external to the origin and groove of the olfactory lobe, between it and the island of Reil.

The whole brain was more vascular than normal. There had been a slight effusion of serum into the arachnoid. A large clot of blood was found in this cavity, and also in the meshes of the pia mater, just below the anterior portion of the left hemisphere. A small ruptured opening was present in the front part of the aneurysmal sac, where it had given way and extravasated its fluid contents. Its more solid contents were tolerably firm and resistant, from layers of fibrine and coagulum lying immediately within its walls. Some flaccidity of its more prominent portion around the aperture indicated the presence of a cavity which had contained fluid blood. The history of the case was as follows:—

A lady's maid, aged 29, of a scrofulous constitution, first experienced, three years ago, pain in the left temple and side of the face, which she attributed to neuralgia. It increased in cold weather, and extended gradually to the side of the nose and left eyeball, causing, after needle-work, some temporary dimness of vision. On the 2nd of September, 1867, while sitting and talking in good health and spirits, after supper, she suddenly fell off her chair insensible, and with stiff limbs. For an hour and a half she remained partially comatose and faint, and then recovered her senses, and could speak distinctly. Violent sickness followed, and continued more or less during the whole night. Next day she had much pain on the left side of her head and face, but no unusual heat. Pulse, 70, and weak. Aperients and salines were administered, and she gradually improved until the 9th, when she was again seized with slight unconsciousness and some difficulty in articulating of temporary duration, and an increased and continued pain in the head. The left pupil was rather dilated and acted sluggishly. Pulse feeble, 68 to 72. Ice to the shaved head, mustard plasters, and purgatives were then employed. On the 13th there was some disposition to stupor; pain in the left side of the head was much complained of; both pupils were sluggish in responding to light; pulse, 66; a blister was applied between the shoulders. On the 14th and 15th, she became very much worse, complete paralysis of the right side having supervened; could not take food; was quite unconscious and incapable of being roused, passing her excretions involuntarily, with cold extremities, fully dilated pupils, and breathing all but stertorous. Blistering fluid to the left side of the head, and hot-water bottles to the feet; beef-tea, weak brandy and water, and ten grains of calomel given. On the 16th she showed some disposition to returning consciousness, and took a little nourishment. On the 17th she was

rather more sensible, but the jaws were quite clenched and she was not able to articulate. On the 18th and 19th she became again quite sensible, and could respond with difficulty, "Yes" and "No." The head was at this time drawn over to the right shoulder, and she complained of great pain down the muscles of the neck on the right side, which were tensely contracted. Blister repeated, and iodine-paint applied over the head, and iodide of potassium, with the bicarbonate of potash, chloric ether, and liquor cinchonæ, administered. Up to the 14th of October, she gradually improved in every way; the power of speech returned completely. There was no palsy of the muscles of the face, although the general paralysis of the right side remained to such an extent that she could only move the right hand to open and shut it, and had very slight motion in the fore-arm. She had quite regained the control over the evacuations, took food with relish, and was very cheerful. At this time she was removed three miles, and placed in the Bridgewater Infirmary, under the care of Mr. Parsons. She remained in much the same state till the evening of the 25th of October, when she was suddenly seized after supper, as in the first illness, with a fit, and died before the house-surgeon could get to her.

Mr. John Wood *for* Mr. Parsons *(of Bridgewater)*,
19*th of November*, 1867.

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9. *Cyanosis; hypertrophy of the heart, chiefly affecting the right ventricle; partial closure of the pulmonary artery by adhesion of flaps of semi-lunar valves; perforation of septum ventriculorum; adhesion of flaps of tricuspid valve; patent foramen ovale; closure of ductus arteriosus.*

A female child, aged 3, died in University College Hospital, in October, 1867. Family phthisical in some branches; the mother had small-pox during pregnancy. Patient was healthy, and had no appearance of cyanosis up to the age of nine months; at that time she suffered severely from bronchitis, which lasted three months, and during this attack the blue colour of the finger-nails was first noticed; since then it has gradually got worse, and has affected the lips, nose, cheeks, and trunk. About six months ago she suffered from hooping-cough.

The patient, on admission, was plump and well nourished, but there was marked lividity on the tip of the nose, cheeks, lips, ends of fingers and toes; ends of fingers clubbed; cutaneous veins of forehead and

thorax were very visible; some distension of jugular veins, but not in proportion to veins of the rest of the body. The patient was chilly, and suffered at times from attacks of dyspnœa. Her aspect was intelligent, and her temper, on the whole, cheerful. There was a very remarkable præcordial bulging so as to cause a distinct depression of the ensiform cartilage. The bulging was more marked on the left side than on the right. Heart's impulse heaving, felt most strongly at ensiform cartilage, and thence to the nipple, and for a finger's breadth inside. A strong systolic thrill felt over the whole cardiac region. Dulness reached one inch and a half to the right of the sternum; its upper border reached to second cartilage; the left border to about one inch outside the nipple. A loud systolic murmur was heard over the whole heart, but with maximum intensity between the fourth left cartilage and the nipple. It was of low pitch and rough, and was heard of about equal intensity at both second left and second right cartilages. It entirely covered the first sound over the whole heart, and continued with the second, which was almost inaudible, but was not apparently associated with any distinct murmur; the systolic murmur was heard at both backs, louder at the angle of the scapula than elsewhere. Inhalation of oxygen had no effect on the dyspnœa. The lungs were healthy in physical signs. Urine free from albumen. Liver large, reaching nearly to the umbilicus. No œdema. The child had at times fits of dyspnœa; she died rather suddenly and unexpectedly.

Post-mortem examination.—Cyanotic appearance of skin considerably diminished. Prominence of lower sternal region exceedingly distinct. The bulging affected the left more than the right side. Liver considerably depressed, reaching to three inches and a half below ensiform cartilage, and to three inches below the eighth costal cartilage on the left side. On removing sternum, heart was found occupying the whole of the anterior mediastinum, reaching as far as the cartilages of the ribs on each side, from the first to the seventh rib. The left lung was completely pushed back by the enlarged heart, only reaching to the outer border of the second costal cartilage. Pericardium was nowhere adherent and nowhere thickened, and contained about one ounce of clear straw-coloured serosity. Right auricle and ventricle were both enormously distended with dark clotted blood. Right auricle and its appendix much enlarged; musculi pectinati hypertrophied. Foramen ovale, patent, of the diameter of one inch and a quarter when distended by the tip of the finger. The annulus ovalis was very strongly marked. The orifice of the right coronary vein was very large, and the

valve of this vein was very distinct. Tricuspid valve admitted the tip of the thumb and two fingers. The ring at orifice was not narrowed nor thickened. The chordæ tendineæ from below the flap of the valve were shorter than natural, and adhered at the edges too deeply from a thin base of attachment; they were greatly thickened, swollen, and gelatinous-looking, and their auricular surface was studded with numerous fine warty vegetations. At the junction of the two most anterior flaps of the valve with the septum ventriculorum was an opening into the left ventricle capable of admitting the tip of the middle finger, and measuring $1\frac{1}{8}$ inch in circumference; this opening was very irregular when not artificially distended; it was bounded anteriorly by the anterior flap of the tricuspid, and partially by the tendinous attachment of the chordæ tendineæ of the flap. In fact, a small series of openings existed between these, independently of the larger opening, into the cavity of the left ventricle. At the lower posterior side of the opening, but also forming part of its boundary, there was an aneurysmal pouch capable of holding a medium-sized pea, but with an irregular orifice, which was bounded in part by the chordæ tendineæ of the antero-posterior flap, and partly by the fore-edge of the valve which was greatly thickened. This aneurysmal pouch projected into the left ventricle; it had its walls composed apparently of the same structure as the flaps of the tricuspid valve, but they were greatly swollen, semi-transparent, and gelatinous-looking. It appeared as if the whole opening had been formed by inflammatory softening of the two anterior flaps at the point of junction with the septum ventriculorum; this opening was exactly opposite the orifice of the aortic valves, but did not appear to affect any of these, though the aneurysmal pouch at its free surface was almost, if not quite, in contact with their bases. The orifice of the pulmonary artery, capable below of admitting the tip of the ring-finger, was obstructed above by the union of the semi-lunar valves, at their edges and for about half their depth, to a diameter of $\frac{5}{16}$ of an inch. The orifice projected in a nipple-shaped form into the artery; it was irregularly puckered and surrounded by firm warty growths; the attachments of the flaps of the valves could for the most part be distinctly seen, but one valve adhered through almost its entire length to the arterial wall, and the opening from the ventricle was thus brought into close apposition to the arterial wall. The pulmonary artery beyond the obstruction was larger than might have been expected, having a circumference of nearly one inch and a half close beyond the opening, but there was no communication be-

tween the aorta and the pulmonary artery. The ductus arteriosus was completely closed, though the traces of the opening were very distinct. The mitral valve was apparently healthy. The flaps of the aortic valve closed perfectly; there was some swelling of the corpora Aurantii. The right ventricle was greatly thickened; its anterior wall measured in the centre three-eighths of an inch, and at the extreme apex it was one-eighth of an inch thick. The musculi pectinati in the conus arteriosus of this ventricle were excessively thickened, and the whole of the muscular tissue around the pulmonary opening was very dense. The left ventricle measured at the centre $\frac{5}{16}$ of an inch, and at the apex a quarter of an inch, in thickness. Heart weighed seven ounces and three-quarters. Liver indurated, not granular, and weighed twenty-three ounces; intense hepatic congestion; tissue pale, but presented, generally speaking, normal characters. Kidneys much indurated, congested, and weighed together five ounces and a half. Stomach and intestines intensely cyanotic; one or two small echymoses in the stomach. Solitary glands very prominent in stomach and intestines. Malpighian bodies of spleen very distinct; tissue much indurated. Lungs, everywhere crepitant, appeared decidedly less full of blood than natural, and weighed together six ounces and a half; only one or two spots of lobular collapse; no emphysema; bronchial mucous membrane healthy.

Dr. Wilson Fox, *3rd of December*, 1867.

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10. *Fatal embolism of the pulmonary artery, and thrombosis of the saphena and femoral veins, from a patient who died suddenly of typhoid fever.*

I show this specimen for Mr. Hilliard, of the Surrey County Hospital. The following is his account of it:—

J. F., aged 63, was admitted on the 25th of September, suffering from typhoid fever, of which there were all the symptoms, in a mild degree. On the morning of the 28th, she complained of a severe pain in the inside of the right thigh, and on examination, linear swelling and redness along the course of the interior saphena vein were found. The vein felt like a hard cord, and was very tender. Hot fomentations were used, and up to the 2nd of October, both the fever and the phlebitis progressed favourably. On that day she remarked how much better she felt; but at six a.m., while on the "bed-pan" she raised her body and suddenly became very faint, and had great pain at the heart. She retched slightly and gasped for breath, and died in about three

minutes. I saw her just as she was taking her last breath, and the face was not livid, or scarcely so. I thought immediately that she had embolism, and next day made a *post-mortem* examination.

I found the lungs universally adherent, and congested at the posterior part. The heart was free from disease; but in the pulmonary artery were found the specimens exhibited: they were situated just in the primary bifurcations of the artery, right and left. In the right was found the short one, with the long strip doubled on itself; in the left was another piece doubled on itself. They all appear to me to be *ante-mortem* clots. The liver was healthy. There were gall-stones in the gall-bladder. The spleen was very soft and pulpy, but not large. There were some clean ulcers in the ileum, situated transversely in the gut. In the left ovary was a cyst, containing hair, fatty matter, and rudimentary bone. The kidneys showed a granular state, on removal of their capsules. The saphenous vein had its coats thick and red, the redness not being due to *post-mortem* staining; the lining membrane had a little flaky lymph adherent to it. There is no doubt that the embolism of the pulmonary artery, by a clot from the saphena vein, was the cause of her sudden death. Dr. Moxon *for* Mr. Hilliard, 19*th of December*, 1867.

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11. *Fibroid (probably syphilitic) degeneration of the heart.*

J. S., aged 45 years, applied at 7.20 p.m., on the 1st of December, 1867, for a night's lodging in the Homeless Poor wards of the East London Union. He stated that he had walked that day from Croydon, (which, as his clothes were perfectly dry, and the day had been continually wet, was evidently untrue,) and that he was going on the next day to Barnet. He was apparently a hale and hearty man; he was very merry and talkative; and he made no complaint whatever of illness. He had one pint of gruel and six ounces of bread for his supper; and about one hour afterwards he had a warm bath (about 70° Fahr.) in which he was almost ten minutes. He then walked up two pairs of stairs to his bunk, which holds a straw bed, straw pillow, and two rugs for a covering. About five or six minutes afterwards, a lad sleeping in the same room ran downstairs, and said that a man was in a fit. The superintendent immediately went up and found the man insensible, snoring, foaming at the mouth and nostrils, and the colour of his face rather blueish. He was also convulsed, more especially on the left side. He lived for ten minutes, but was dead before Dr. Fowler's arrival.

2nd of December, 3.30 p.m. Autopsy, by order of the coroner.

No external marks of violence. Body well nourished. Face swollen, and mottled with small blueish veins. Frothy mucus exuded from the mouth and nostrils. Quite half an inch of fat on the abdominal and thoracic parietes. Good muscular development. No anasarca. Peritoneal covering of the abdominal viscera congested. Liver large, of a deep hepatic colour, and exuded much liquid blood on section. Spleen firm, and full of liquid blood. Right kidney, large, of a deep purple colour on section, and exuding much dark fluid blood; pus in pelvis. Left kidney of a natural size, and of a much less deep colour, and exuded less blood; a little pus in the pelvis. The stomach contained about half a pint of gruel and several small pieces of bread; on its posterior wall, just beneath the lesser curvature, was an ulcer as large as a fourpenny-piece (probably *post-mortem*), and around this the mucous membrane was dark with arborescent congestion. The omentum and all the viscera were loaded or surrounded with fat. The lungs were crepitant, and exuded frothy mucus wherever cut and pressed. The pericardium was thickened, and contained about six ounces of colourless serum. The heart was very large, and loaded externally with fat. The left ventricle was hypertrophied and dilated. and it contained one loose colourless clot, about three inches in length. In the lower half of the septal wall, the structure appeared to be converted into a fibroid or fatty tissue, which was prolonged into a thick nodular mass, of about three inches in length, towards the apex. The right ventricle was also hypertrophied. The posterior wall, for nearly half of its depth, was apparently converted into fat, or fibre-tissue. The columnæ carneæ seemed to be similarly altered, no red fibre being visible on section. Fluid blood escaped from the large vessels as the heart was separated, and none was found in the cavities. The various valves were more or less opaque and thickened. The skull was very thick, and was with difficulty detached. The dura mater was opaque and thick. The vessels of the brain contained much fluid blood, the grey matter being particularly dark.

Dr. Henry W. Fuller *for* Dr. Robert Fowler, 19*th of December*, 1867.

Report on the heart exhibited by Dr. Fuller.—The heart submitted to us for examination was considerably enlarged; it presented a moderate amount of fat on its surface, and showed no evidence of recent or old peri or endo-carditis. The lower third of the organ was occupied by masses of new material, of a yellowish white, semi-translucent appearance, and of firm consistence; some of these, in the form of slightly elevated nodules, were visible externally, whilst other patches were only recognizable where the walls of the ventricles had been cut into,

owing to the new tissue being situated within the substance of the walls, or involving, more particularly, the inner surface of the ventricles and their columnæ carneæ. The adventitious material was disposed in the following manner: At the lower and posterior part of the left ventricle, two or three of the raised patches were seen externally, and in the middle of the left border of the ventricle was another similar patch, about the size of a marble. In its lower third, where the anterior ventricular wall was cut through, almost the whole thickness of the ventricle was occupied by the new material, which extended from the endocardium to within a very short distance of the surface. The more central parts of this mass were distinctly yellow and opaque, owing to a fatty degeneration of its elements. Almost the whole of the apex of the ventricle was similarly involved, and here also the new material had invaded the entire thickness of the ventricular wall. The aortic and mitral valves had undergone a slight amount of fibroid thickening, and there was increased thickening and opacity also of the endocardium in the upper part of the ventricle. The aorta showed an early stage of atheroma and fibroid thickening. In the lower half of the right ventricle, two or three small masses of the new material, rather larger than peas, were seen projecting on the posterior surface; the apex of the ventricle was also considerably implicated; but the greatest amount of the morbid product was seen within. Here it existed in a more diffused condition, and appeared to infiltrate nearly all the trabeculæ, and the greater part of the papillary muscles. In the largest of these, more than half of the muscular tissue had disappeared, and was replaced by the new growth, the central parts of which were yellow and opaque. The tricuspid valve and the lining membrane of the upper half of the ventricle presented no abnormal appearance. Both auricles were healthy.

A careful examination of all the masses of the new material showed that these shaded off, more or less imperceptibly, into the contiguous healthy muscular tissue (Plate IV., fig. 4), though in the substance of the new deposits no trace of muscular tissue could be recognized by the naked eye. On microscopical examination it was found that the new material was an essentially fibro-nucleated structure, having a close resemblance to the ordinary early stage of fibroid degeneration or substitution, and also to the deposits looked upon as syphilitic. Although the new tissue was considerably altered by the spirit and *post-mortem* changes, the usual round and oval, mixed with oat-shaped, nuclei could be detected, together with fine fibres and much granular material,

Microscopical examination (Plate IV., figs. 5 and 6) showed also the infiltrating character of the growth, and its seeming increase by the shooting out of trabeculæ of the new tissue into the midst of adjacent healthy muscular fibres, which appeared gradually to have disappeared as the new material grew and increased. In many instances the new growth seemed to have started from the walls of the blood-vessels.

Although there is no history of syphilis, and no syphilitic lesions are reported to have been found in other organs of the body, we are strongly impressed by the similarity of the morbid changes in this heart, with those which have been found in the bodies of persons who have undoubtedly suffered from syphilis. The shape and arrangement of the morbid masses is entirely different from what is met with in the course of an ordinary fibroid degeneration, since in some places more or less distinct tumours are met with, and there was no evidence in this case of the pre-existence of peri or endo-carditis.

Dr. Samuel Wilks,
Dr. H. Charlton Bastian, *7th of January*, 1868.

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12. *Aneurysm of the ascending aorta pressing upon the base of the right ventricle and opening into the origin of the pulmonary artery; with remarks on the communications of the sacs of aneurysms with the cardiac cavities and adjacent vessels.*

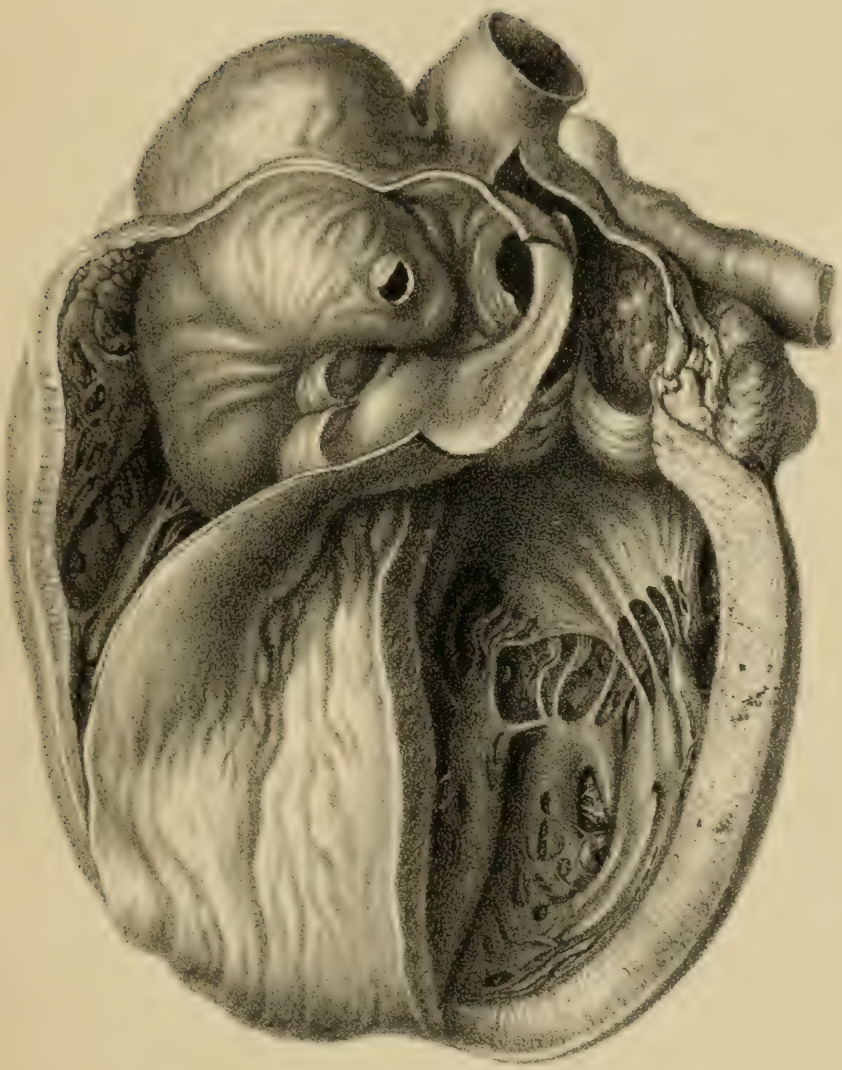
W. S., aged 26, was admitted into St. Thomas's Hospital on the 11th of October, 1867. He was of a healthy family, and had enjoyed good health till he had an attack of rheumatic fever four years before. He recovered from this, and continued well till within fiveweeks of his admission. He stated that he first suffered from pain in the abdomen, especially in the epigastrium and right hypochondrium, followed by shortness of breathing and a dry cough; and about a month after his stomach began to swell, and subsequently the lower extremities became œdematous. When admitted, his cheeks were flushed, the lips livid, the tongue clean, but morbidly red, and the pulse sharp and of a somewhat regurgitant character. The respirations were short and abrupt. There was nothing materially amiss with the lungs, except that the respiratory sounds were harsh, and that there was some rather fine crepitation at the lower part of the right side. The præcordial dull space commenced at the level of the second cartilage and became entire at the third, and extended from the right side of the sternum to within a finger's breadth

of the line of the left nipple. The apex of the heart apparently beat in the fifth interspace below the nipple. The external jugular vein on the right side was distended, and the carotids pulsated visibly. Over the whole præcordia there was a systolic murmur, which was most distinct at the level of the fourth cartilage, and was there followed by a ringing second sound. To the right of the upper part of the sternum the murmur was distinctly heard, but was not there very loud, and the second sound was followed by a slight murmur. At the lower part of the præcordial region the systolic murmur was heard, but that with the second sound was inaudible; neither murmur could be heard in the left dorsal region. The liver was considerably enlarged and tender to the touch. There was general anasarca and some ascites. The urine was not albuminous. He died on the 28th of November.

The *post-mortem* examination took place on the following morning. The lungs, especially the right, were much congested. The liver was enlarged and mottled, and weighed four pounds twelve ounces avoirdupois. The kidneys were pale, and apparently healthy. The spleen was healthy, and weighed three ounces and a half. The pericardium was extensively attached by old, but not very firm, adhesions. The heart was greatly enlarged, and weighed twenty-eight ounces. The aortic valves were all somewhat opaque and thick, and the left fold was much thickened and contracted, so as to allow of free regurgitation. Immediately above the angle of attachment of the right and left folds there was an expansion of the coats of the aorta, involving a considerable portion of the front and right side of that vessel, so as to constitute an aneurysmal sac fully the size of a large hen's egg. This protruded into the cavity of the pericardium above, and into the upper part of the infundibular portion of the right ventricle and origin of the pulmonary artery below, so as greatly to obstruct the passage. (See Plate VI.) The portion of the aneurysm which projected into the ventricle involved the pulmonary valves, one of which was completely destroyed and another partially so, the third being entire. At the level of the pulmonic orifice there was an oval opening from the sac of the aneurysm into the ventricle, which had thin and smooth edges as if produced by the gradual expansion and thinning of the coats. It was of small size, about two lines wide, and four long. Below this and on the most prominent portion of the aneurysm where projecting into the right ventricle, there was a patch of fibrine, about a line in thickness and of the size of the middle finger-nail, and on the endocardium on the opposite side of the ventricle there was a corresponding patch; it was evident

DESCRIPTION OF PLATE VI.

This Plate illustrates Dr. Peacock's Case of Aneurysm of the Ascending Aorta pressing upon the base of the Right Ventricle and opening into the Origin of the Pulmonary Artery. Drawn on stone by Mr. E. Burgess (p. 111).



F Burgess lith ad nat

W West imp

from the smooth and polished surfaces of the two that they had rubbed together during the ventricular systole. The lower edge of the opening from the aorta into the aneurysm formed a distinct projection; the inner surface of the sac was rough and irregular, and the coats were, in places, atheromatous and very thin, both where projecting into the pericardium and into the ventricle. The cavity contained only recent coagula. The left ventricle was greatly enlarged, and was pointed at the apex; its walls were considerably increased in width, and the muscular substance was firm. The mitral valves were somewhat thick and opaque. The left auricle was large; the right auricle and ventricle were dilated, and the walls of the ventricle were thick and firm and had in places undergone the fibro-cartilaginous transformation. Much coagulum was contained in the cavities on both sides.

The dimensions of the heart were as follows:—

			English
Girth of the right ventricle - -	81·	Paris lines = 182·25	m.m. or 7·18 inches.
„ left „ - -	66·	„ = 148·5	„ = 5·86 „
Thickness of walls of right ven. base	3·	„ = 6·75	„ = 2·66 „
„ „ midpoint	3·5	„ = 7·87	„ = ·31 „
„ „ apex -	1·5	„ = 3·37	„ = 1·33 „
„ „ left ven. base	5·	„ = 11·25	„ = 4·44 „
„ „ midpoint	7·	„ = 15·75	„ = 6·21 „
„ „ apex -	3·5	„ = 7·87	„ = 3·1 „
Length of right ventricle - -	59·	„ = 132·75	„ = 5·23 „
„ left „ - -	35·	„ = 78·75	„ = 3·1 „
Right aur. vent. ap. ad. ball No. 19	66·	„ = 148·5	„ = 5·86 „
Left „ „ „ 15	54·	„ = 121·5	„ = 4·79 „
Pulmonic „ „ „ 10	39·	„ = 87·75	„ = 3·46 „
Aortic „ „ „ 11	42·	„ = 94·5	„ = 3·72 „

This case presents several points of great interest in reference both to diagnosis and pathology.

The physical signs which were observed indicated the existence of obstructive and regurgitant disease of the aortic valves; but there was more evidence of interference with the circulation on the right side, in the amount of anasarca and the turgescence of the jugular veins, than ordinarily attends simple aortic valvular disease. For this at the time no satisfactory reason could be given, but after death it was fully explained by the presence of the aneurysmal sac which was found to press on the pulmonic orifice. The examination after death proved that the diagnosis was correct so far as the state of the aortic valves was concerned; but that there were other diseased conditions which had not been detected during life and

which explain the peculiarities that were then not accounted for. It will be observed that there was a loud diastolic sound heard to the left of the sternum, about the level of the fourth cartilage, and this was supposed to be due to secondary dilatation of the pulmonary artery and consequent more powerful reaction on the valves. The examination after death showed, however, that the pulmonic orifice, so far from being increased in size, was, on the contrary, obstructed; and it must be concluded that the loud sound heard was caused by the sudden tension of the walls of the aneurysm during the ventricular diastole. The murmur which followed the second sound was ascribed, during life, to the aortic valves being only slightly incompetent; it was supposed that they might admit of being properly brought together, but that after approximation one of the segments might permit retroversion and consequent regurgitation. With the results of the *post-mortem* examination before us, the correctness of this inference may, however, be open to doubt, and it may be supposed that the murmur was rather due to the escape of blood from the aneurysmal sac by the opening into the pulmonic orifice. I am, however, not disposed to adopt that supposition, but rather to maintain my original view. Indeed, it seems most probable that the communication between the aneurysmal sac and pulmonary artery and right ventricle only occurred shortly before death, and was in no degree connected with the auscultatory signs which had been observed during life. Had the opening been of long duration, it could scarcely have retained the thin transparent edges without any thickening or fibrinous deposit upon them.

2. The alteration in the form, size, and weight of the heart were such as generally occur in cases of aortic valvular and aortic disease of some duration, with, however, a greater degree of increase in the right side than generally obtains in such cases. The organ was altogether much enlarged; and the chief stress of the disease having, as usual, fallen on the left ventricle, that cavity was much expanded, and especially was elongated and pointed at the apex; its walls were greatly increased in thickness, and the muscular structure was both firm and resistant. The left auricle and the right cavities were dilated, and the walls of the right ventricle hypertrophied—the hypertrophy of that cavity being doubtless greater from the obstruction to the exit of the blood from the right ventricle, caused by the pressure of the aneurysmal sac. All the apertures, except the pulmonic, were also, as in cases where there is general enlargement, increased in capacity. The heart was nearly three times its natural weight.

Remarks on the communication of the sacs of aneurysms with the cardiac cavities, or adjacent vessels.

The earliest case, so far as I am aware, in which an aneurysm has been found to open into any of the cavities of the heart, or the vessels entering or passing from the organ, is one related by M. Beauchene in 1811,* the seat of communication being in that instance the left auricle. In 1812, Dr. Wells recorded a case, which had been seen during life by Dr. Baillie, in which an aneurysm burst into the pulmonary artery. In 1832, an instance of rupture of the sac of an aneurysm into the vena cava superior was noticed in the *Lancet;* and in 1838, Mr. Curling related a case of communication with the right auricle. A second instance of opening into the pulmonary artery occurred to Dr. Munro, in 1839; and in 1840, Dr. Reid reported four cases—one in which the aneurysm opened into the right auricle, two which ruptured into the pulmonary artery, and a fourth of communication between the descending aorta and the left pulmonary branch. In the same year, Dr. Thurnam illustrated the pathology of cases of this description in an able and original memoir, published in the Medico-Chirurgical Transactions. In this paper he collected the particulars of ten cases, including those before referred to, and one which had occurred at the Westminster Hospital in the practice of Dr. Roe, and which had been under his own observation;† and referred to the existence of six other specimens preserved in different museums. Since that time, various instances of aneurysm opening into the cardiac cavities or adjacent vessels have been placed on record in this country, or on the Continent. I have myself had the opportunity of seeing two recent cases besides that reported in this communication. Of these, one occurred in the practice of Dr. Henderson, at the Royal Infirmary of Edinburgh, in which the aneurysm opened into the right ventricle. In the other, which fell under my own notice at the Chester Infirmary, the sac opened into the appendage of the right auricle. In the appendix to this paper will be found references to, and brief abstracts of, thirty-

* In the Bulletin de la Fac. de Méd. de Paris, Tom. II., 1809 to 1812, No. 5, 1812, p. 128, a case of aneurysm of the aorta, which occurred to M. Sue, is related by MM. Payne and Zink. The aneurysm is described as "s'ouvrant" into the pulmonary artery, but it appears only to have projected into the vessel, not to have opened into it.

† In the abstract of this case, contained in the table in the appendix, I have supplied from notes kindly furnished to me by Dr. Thurnam, a much fuller report than has hitherto been published.

three cases which I have found recorded in different periodicals; so that, together with the six specimens mentioned by Dr. Thurnam, as contained in the museums of the Royal College of Surgeons, St. Bartholomew's Hospital, and the Faculty of Medicine of Paris; and four cases described by Rokitansky, in which, though communications had existed, they had become closed, the recorded cases cannot at the present time be less than forty-three in number. It is, indeed, highly probable that with leisure to search the contents of museums and the literature of this and other countries, the number might be considerably increased. Of the cases referred to, three, those related by Dr. Ogle, Dr. Lichtenberg, and Dr. Moxon, are published in our own *Transactions*.

The cases collected may be classed in four groups, according to the portion of the aorta from which the aneurysms arose.

1st. Those in which the sac is situated at the origin of the aorta, in the sinuses of Valsalva or immediately above the points of attachment of the valves. This group embraces the largest number of cases, including eighteen of the thirty-two collected.

2ndly. Those in which the sac occupies a part or the whole of the ascending portion of the arch, between the commencement of the aorta and the origin of the arteria innominata. The cases of this description also are not uncommon; they constitute twelve out of the thirty-two cases.

3rdly. Cases in which the whole of the ascending and transverse portions of the arch, with more or less of the descending aorta, are dilated. Two cases only of this kind are included in the collection. And

4thly. A solitary case, to which I shall have again to allude, in which the ascending portion of the arch was dilated, and from the upper part of the descending aorta beneath the orifice of the left subclavian artery, an infundibular shaped sac arose, which opened into the left branch of the pulmonary artery.

The aneurysms arising near the origin and from the ascending portion of the aorta most commonly occupy the right and anterior aspects of the vessel. Dr. Thurnam states, that of eighteen cases, in which there were twenty-two distinct aneurysms, which were more or less decidedly limited to the sinuses of Valsalva, and which had either pressed upon or ruptured into some portion of the heart, twelve were situated in the right, four in the left, and six in the posterior sinus. He also says that the portions of the vessel above the sinuses, and especially above

the points of attachment of the valves, are even more frequent seats of aneurysm than the sinuses themselves.

In the more recently reported cases, it is rare that the descriptions are so precise as to enable a similar comparison to be instituted; but of seven cases which are either fully described or in which I have had the opportunity of personally examining the specimens, in five the aneurysm occupied the right, and in two the posterior sinus; and in six cases in which the sac arose above the points of attachment of the valves, in three it was above the angles of the right and left valves, and in three above the right and posterior valves.

The *size of the aneurysmal sacs* varies in some degree according to the seat which they occupy; those originating from the sinuses and the commencing portion of the aorta being rarely so large as those which arise from a higher part of the vessel. Thus of the cases of the first group the aneurysm is said to have been in

1 case the size of a nut, in
3 of a walnut,
4 of a hen's egg,
1 of the fist, and in
3 of an orange.

In one case it is said to have been capable of holding an ounce and a half of blood; in one it was eighteen lines in circumference and twelve deep; and in one in which the sac was biloculate, one portion was as large as a hen's egg, the other double that size.

Of the second group of cases, the aneurysm is compared in

2 cases to a hen's or duck's egg,
2 to the fist,
1 to an orange, and in
5 cases it occupied nearly the whole, or the whole, of the ascending portion of the aorta.

In one case the sac was biloculate, one portion being as large as a hen's egg, the other as a walnut.

In the two cases of the third series, the dilatation is said to have been considerable; and in the solitary case of the fourth description the sac at its aortic extremity would admit the thumb, and at its termination in the left pulmonary branch was of the size of the carotid or subclavian artery. In several of the cases besides those mentioned, the aneurysms are stated to have been biloculate, or to have had pouches projecting from the larger cavity.

Seat of communication.—The aorta at its origin is in immediate con-

nection with the pulmonary artery, the right ventricle, the right auriculo-ventricular aperture, and the adjacent parts of the right auricle. Higher up, it is in juxta-position with the sinuses and appendages of the auricles, and with the upper portion of the right ventricle, and especially with the pulmonary artery and its branches. At a still higher level, a large portion of the vessel is exposed in the pericardiac cavity, and the descending vena cava lies on its right side. It is, therefore, with these several parts that aneurysms arising from the different portions of the aorta especially tend to form communications. Thus, of the cases of the first group, or those in which the aneurysms were situated at the commencement of the aorta,

3 opened into the right auricle,
1 into the right auriculo-ventricular aperture,
3 into the right ventricle,
1 into the right ventricle and pulmonary artery,
7 into the pulmonary artery, and
3 into the left auricle.

Of the series of cases in which the sacs were situated in the ascending portion of the aorta,

6 opened into the vena cava superior,
1 into the right auricular appendage,
1 into the right ventricle,
1 into the right ventricle and pulmonary artery, and
3 into the pulmonary artery.

In one of the cases in which the whole arch was dilated, the connection was with the vena cava superior; in the other, with the pulmonary artery. In the single case of the fourth class, it has already been mentioned that the supposed sac opened into the left pulmonary branch. Thus, aneurysms at the commencement of the aorta generally open into either auricle, the right ventricle, and especially the pulmonary artery; while those which arise from the ascending aorta, form connections with the vena cava superior, and less frequently with the pulmonary artery. Taking the whole of the cases into consideration, without reference to the precise portion of the aorta from which the aneurysmal sacs arise, and adding to the cases collected in the appendix the six others of which the specimens are stated by Dr. Thurnam to exist in museums, and the four described by Rokitansky, of forty-three cases, in

7 the aneurysms opened into the vena cava superior,
5 into the right auricle or auriculo-ventricular aperture,

4 into the right ventricle,
2 into the right ventricle and pulmonary artery,
18 into the pulmonary artery,
1 into the left pulmonary branch,
3 into the right pulmonary branch, and in
3 into the left auricle.

Dr. Hope has described and figured a case* in which an aneurysm, at the origin of the aorta, was supposed to have burrowed behind the attachment of the valves, and so to have opened into the cavity of the left ventricle. But, while there can be no doubt that aneurysms of the sinuses of Valsalva do sometimes follow this course (though no instance of the kind is included in the collection), it seems more probable that the case referred to was one of aneurysm of the ventricle opening into the aorta, such a result being by no means of uncommon occurrence.†

In one of the cases described by Mr. Beck, in which the sac opened into the right ventricle, there is said to have also been a communication between the ventricles. In this case the nature of the disease is not clear. The communication between the ventricles may have been a congenital defect entirely unconnected with the aneurysm; but it is perhaps more probable that a small sac may have been formed at the base of the ventricle in connection with the diseased valves, and have opened both into the origin of the aorta and into the right ventricle. Cases of this kind frequently occur as the result both of acute and chronic valvular disease. The case in which an aneurysm originated at the upper part of the descending aorta, and opened into the left pulmonary branch, is said by the author, the late Professor Reid, of St. Andrew's, to have followed precisely the course of the ductus arteriosus in the fœtus. While admitting the possibility of its being a diseased condition of a duct which had never become obliterated, he inclined to the idea that it was an aneurysmal sac. I hesitate much to differ from any opinion expressed by Dr. Reid; I cannot however but think it more probable that the disease was of congenital origin. The peculiar infundibular shape of the sac, with its large aperture at the aortic end

* Morbid Anatomy, Figs. 6 and 7, p. 20.

† In a case by Dr. Hanna (*Dublin Journal*, Vol. VII., p. 80, 1835), an aneurysm at the origin of the aorta projected and threatened to burst into the cavity of the left ventricle. I have also recently met with a case in which an aneurysm of one of the sinuses opened into the left ventricle.

and its smaller opening at the pulmonic, and the fact that the remains of the duct could nowhere be found, certainly are in favour of the latter view.

In several of the cases collected, and particularly in that now related, the aneurysm projected and threatened to burst into the sac of the pericardium. This occurrence has been familiar to pathologists since the publication of the well-known case of Morgagni; and it is a result readily explained by the thinness of the external coat of the ascending aorta, and the very imperfect support which the vessel receives in that situation from the attached pericardium. I have not thought it worth while to collect cases specially to illustrate this termination. The cases published in the Pathological Reports may, however, be taken as affording a fair indication of the relative frequency with which the aneurysms of the commencement and ascending portion of the aorta rupture into different parts. Thus it will be found that only four cases of aneurysm rupturing into any of the cardiac cavities or vessels are reported; while there are eleven cases in which the aneurysm burst into the pericardium. This calculation does not include the cases of *dissecting aneurysm*, which are in various respects very different from common aneurysmal tumours, and, in a large proportion of cases, rupture into the pericardium. Aneurysmal sacs, which burst into the pericardium, generally originate from the ascending portion of the aorta above the sinuses, and they are usually only of a small size and probably of recent origin, so that the layers of pericardium on their surfaces have not become adherent. Indeed, of the cases of aneurysm described in the *Transactions*, which ruptured into the pericardium, in all but two, one related by Dr. Cockle,* in which there was a pulsating tumour externally, the other by Dr. Little,† the sacs were comparatively of small size. On the other hand, aneurysmal tumours which originate from the ascending portion of the aorta, near its origin, do occasionally attain a very large size without rupturing into the pericardium. I may particularly refer to a case of the kind exhibited at the Society by myself, which had been sent up from Hastings by Mr. Penhall,‡ and a case which has quite recently occurred in my practice at St. Thomas's Hospital, in which a sac originating immediately above the point of attachment of the right and posterior semi-lunar valves, was certainly larger than a full-sized orange. In all such cases the layers of pericardium doubt-

* Vol. VIII. 1856-57, p. 132.

† Vol. I. 1846-47 and 47-48, p 232.

‡ Vol. VIII. 1856-57, p. 130.

less become adherent at a comparatively early period, and so afford additional protection to the sac, and prevent its rupture.

The mode by which the communications between aneurysmal sacs and the cavities of the heart are formed varies in different cases. In some instances they occur suddenly, and are produced by the laceration of the sac of the aneurysm and the walls of the cavity or vessel which have become intimately united; in others they result from the gradual thinning of the tissues till they ultimately give way. In the former class of cases, if the patient die shortly after the occurrence of the rupture, there is found a longer or shorter fissure, with ragged, irregular edges; in the latter, under similar circumstances, the aperture is round or oval, and is surrounded by very thin and smooth margins. If, however, as is frequently the case, the patient survive the occurrence for some time, the aperture becomes much altered in appearance, so that it is often impossible to decide in what way it may have been originally formed. It is then usually found to be rounded or more or less oval in shape, and its edges are thick and firm and not unfrequently studded with fibrinous vegetations. The case related by Dr. Wells, of which the preparation is now in the museum of St. Thomas's Hospital, the specimen figured by Rokitansky, two of the cases described by Dr. Reid, and that of Dr. Herapath, in all of which the aneurysm burst into the pulmonary artery; the cases of M. Beau and Dr. Moxon, in which the sacs opened into the left auricle; and those of MM. Goupil and Tripier, in which they ruptured into the vena cava superior, offered very characteristic examples of the formation of openings by laceration. On the other hand, in the case of Dr. Henderson, and that described in this paper, in which the aneurysm communicated with the pulmonary artery, and in the case at the Chester Infirmary, which opened into the appendage of the right auricle, the apertures were the result of gradual thinning and erosion.

The *size of the openings* also varies in different cases; and, in some degree, according to the mode in which they are formed; being considerably larger when due to laceration, and of smaller size when depending on erosion. In the former class of cases they are described as having been in the form of slits or fissures, from a quarter of an inch to an inch and a half long. In the latter they are oval or rounded, and correspond in size to crow or goose-quills, or lead-pencils, or peas, or to large bougies; and in one case the opening is said to have been capable of admitting the little finger. In nine or ten cases there were two or three openings between the sac and the cavity or vessel;

and in some instances, as when there were communications both with the pulmonary artery and right ventricle, the openings were a considerable distance apart.

It is not always possible to ascertain the precise *duration of life* after the occurrence of the communications; for in some cases there do not appear to have been any symptoms which conclusively indicated the period at which the opening occurred; and in others the patients were only under observation during the last period of life, while the communications had probably taken place some time previously. Of cases in which the period was well ascertained, and the openings were probably the result of laceration, in

2 instances the patients died almost immediately; in
1 case in an hour;
1 ,, 2 hours;
1 ,, 4 hours;
1 ,, 13 days;
1 ,, 15 days; and in
1 ,, 5 weeks.

In one case the patient is reported to have survived for a few hours; and in another, in which there were two openings, one of them is supposed to have been formed immediately before death, the other two months previously.

Of similar cases, but where the openings are supposed to have been caused by gradual thinning and erosion, in

2 death was almost immediate; in
1 it occurred in 18 hours;
1 in 6 days;
1 in 8 days;
1 in a month;
1 in 7 weeks;
2 in 2 months;
1 in 4 months;

and in 1 in which there were two openings, one opening is supposed to have preceded death by five months.

This shows, as would indeed be supposed, that death is more frequently immediate or rapid in cases in which the openings are the result of a sudden tear, than when it takes place more gradually from erosion.

Not only, however, does the mode in which the connection between the aneurysm and cavity is found, affect the probable duration

of life after the occurrence, but the seat which the opening occupies is also very influential in the result. Thus, of six cases in which the aneurysms communicated with the vena cava descendens, in three death occurred in from six to fifteen days from the occurrence of the openings; while in the other three the patients survived four, five, and seven weeks. Of four cases which opened into the right auricle or auricular appendix, in one death ensued immediately, and in the others life was prolonged for thirteen days, one month, and four months. Two patients, in whom the communications were with the right ventricle, died,—in one instance probably immediately, in the other in eleven weeks. Of seven cases in which the aneurysms ruptured into the pulmonary artery, in five the fatal event ensued almost immediately or in the course of a few hours, while two other of the patients survived two and four months. Of two patients in whom there were two openings, one into the pulmonary artery, the other into the right ventricle, the first opening preceded death in one case by two months, in the other by five. Of the two cases of rupture into the left auricle one patient died within an hour, the other within four hours of the event. It thus appears that when the communications interfere only with the venous circulation of a portion of the body, the occurrence is not attended with immediate danger, and the patients may survive for several days. When, on the contrary, the formation of the openings causes derangement of the whole venous circulation, there is great danger of the occurrence of immediate or rapid death, though the first effects may subside and the patient's life may be prolonged for some months. Lastly, when the communication is with the left auricle, there is apparently little chance of the patient's long surviving the occurrence. In the first class of cases the danger is probably chiefly due to the disturbance of the cerebral circulation; in the second to the obstruction of the whole venous system, and the consequent secondary disorder of the viscera; and in the third to the engorgement of the lungs.

History.—Symptoms. The patients who are the subjects of aneurysm of the ascending portion of the aorta, are most commonly of the male sex, and at about the middle or more advanced period of life. Not unfrequently they have been the subjects of rheumatism, and have been addicted to spirit-drinking and habits of intemperance. Most usually they present the common cardiac symptoms—dyspnœa, palpitation and tumultuous action of the heart, dropsical symptoms, and signs of engorgement of the lungs and parenchymatous viscera. These symptoms sometimes commence insidiously and advance gradually; in

other cases they occur somewhat suddenly and as the result of some injury or strain. The communications between the aneurysmal sac and cardiac cavities not unfrequently appear to occur under some exertion or emotion which may have quickened and excited the circulation; and their formation is generally indicated by a remarkable aggravation of the previous symptoms, and by the occurrence of syncope. If the communication be with the vena cava superior or the adjacent part of the right ventricle, there is observed a remarkable turgescence of the veins of the chest, upper extremities, head, and neck, and the upper parts of the body and the corresponding limbs become remarkably œdematous, the œdema being, indeed, often limited to these parts. Usually, also, symptoms of active cerebral disorder rapidly supervene. When, on the other hand, the opening is into the pulmonary artery or right ventricle, the dropsy is more general, and the symptoms are rather those of regurgitant disease of the aortic valves combined with mitral or pulmonic obstruction. In the cases in which the aneurysm opens into the left auricle, the symptoms will probably be those of combined aortic and mitral regurgitation.

In several cases in which marked evidences of venous derangement of the upper parts of the body suddenly occurred, the nature of the affection has been correctly diagnosed during life; but where the openings are into the pulmonary artery, right ventricle, or left auricle, the diagnosis will generally be attended with great difficulty and uncertainty. Any inferences in such cases must necessarily be mainly based on the physical signs, and it is only when the patient has been under observation for a considerable period that the signs can be accurately observed and fully considered. The signs which have been noticed in cases of this kind have generally been a harsh murmur heard most loudly over the pulmonic orifice, of a very superficial character, replacing both sounds and occupying the interval, so as either to be continuous or to consist of two portions immediately connected. Such a murmur is propagated in the course of the aorta and its branches, and is not heard, or only indistinctly, at the apex. A marked purring tremor is also generally felt about the pulmonic orifice with the diastole of the ventricle. The difficulty in correctly estimating the inference to be deduced from the signs is however great, for in a large proportion of cases in which there are aneurysms at the commencement of the aorta, the aortic valves also are incompetent or so diseased as to become sources of obstruction. The signs, therefore, of the one condition blend with and confuse those which are due to

the other. Notwithstanding these difficulties, however, conclusions as to the nature of the affection possessing general accuracy have in several cases been arrived at, and in one instance the diagnosis effected was entirely correct. In this case, that of Dr. Wade, two loud murmurs were heard over the fourth cartilage instead of the usual cardiac sounds. The second murmur was of a hissing character, and so prolonged as to continue till the commencement of the systole, and it was accompanied by a marked purring tremor. The first murmur was of a loud bellows character. Both murmurs were heard in the common carotid and over the whole of the upper part of the chest, but were not specially propagated towards the left subclavian region. At the apex a systolic murmur only was heard. From these signs it was inferred that there was regurgitation either from the aorta or pulmonary artery, and most probably from the former; that the regurgitation was not into either ventricle or into the left auricle; and that it was more likely to be into the pulmonary artery than into the right auricle, from the greater frequency of communications of the sacs of aneurysm with the artery than with the auricle.

In the case which is the subject of this paper, though from the evidence of obstruction at the right side of the heart, suspicion was raised that the case was not one of aortic valvular disease alone, the existence of an aneurysm at the commencement of the aorta was not clearly diagnosed, and the communication between the aneurysmal sac and the pulmonary orifice probably only occurred shortly before death. In a case which has more recently occurred in my practice at St. Thomas's Hospital, in which there was a double murmur at the aortic orifice, I was, however, led to infer from the suddenness with which the symptoms were described as having first occurred when the patient was engaged in laborious work, from the engorgement of the jugulars, and the pain experienced in the right side of the neck, and from the murmur with the systole being propagated very loudly to the right and upper part of the sternum, that there was probably not only obstructive and regurgitant disease of the aortic valves, but that an aneurysm also existed at the commencement of the aorta. This inference proved, on *post-mortem* examination, to be correct; and the aneurysmal sac, which was of large size, was found to have pressed upon the right auricle and vena cava descendens, and threatened to burst both into the cavity and vein.

TABLE OF CASES OF ANEURYSM OF THE AORTA OPENING INTO THE CAVITIES OF THE HEART OR LARGE VESSELS.

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
1. Beauchene, Bullet. de la Soc. de Méd. t. ii., 1810, No. 3, p. 38. Dr. Thurnam, Med. Chir. Trans., vol. xxiii., 1840, p. 323, case 13.	About 40	M	No history.	Aneurysm the size of a large nut immediately above the aortic valves, on the convex side of the vessel between the coronary arteries.	The aneurysm projected between the auricles, and pressed on both; there were four small loculi, one of which opened into the left auricle by an aperture two or three lines in diameter.	The sac projected also into the pericardium. Heart much enlarged.	
2. Wells, Trans. of a Soc. for the Imp. of Med. and Chir. Know., vol. iii., 1812, p. 85, M. C. T., vol. xxiii., case 8. The preparation of this case is in the Museum of St. Thomas's Hospital, and is marked y 746.	53	M	A merchant; symptoms of cardiac disease of about three years' duration.	Aneurysm the size of an orange, arising above the right and left aortic sinuses.	The aneurysm adhered to the pulmonary artery just below its bifurcation, and communicated with it by a narrow opening, half an inch long, with jagged edges.	Heart much distended with blood.	After being fatigued by walking and taking a hearty meal, the symptoms suddenly came on while playing with children, and the patient died in eight or nine hours. He was seen by Dr. Baillie.

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
3. Lancet, 1832-33, vol. ii., p. 666, M. C. T., vol. xxiii., case 4. This case is also referred to in the Lancet for 1833, vol. ii., p. 63, as Mr. Beevor's case. The preparation is said by Dr. Thurnam to be at St. Bartholomew's.	41	M	A coachman; intemperate; long subject to dyspnœa, cough, expectoration and palpitation.	Aneurysm of the ascending portion of the aorta, commencing about an inch above the valves, and extending to near the origin of the arteria innominata. It occupied the right side of the vessel, and contained coagulated blood.	An opening less than the size of a sixpence into the vena cava superior, about an inch above the auricle. (The aneurysm pressed upon the vena cava, so as to render its cavity impervious.—*Lancet*, 1833.)	Heart large and ventricles dilated.	The aperture probably formed seven weeks before death. There was great lividity of the face, and clusters of distended veins about the thorax and neck. Œdema at first of face, afterwards of lower extremities. Dulness and impulse under the right clavicle. Loud bruissement opposite the origin of the aorta. Delirium.
4. Curling, Med. Gaz., N. S., vol. i., 1838, p. 895, M. C. T., vol. xxiii., case 5.	35	M	Subject to cough and dyspnœa, and anasarcous for four months.	Aneurysm the size of a hen's egg immediately above the attachment of right and posterior valves.	Opened, by an aperture the size of a crow-quill, into the right auricle, just behind the appendix.	Left ventricle hypertrophied and dilated, and some ossific deposit in aortic valves.	Pulse weak and resilient; pulsation and murmur to the right of the upper part of sternum; lividity of face. Orthopnœa.
5. Reid, Ed. Med. and Sug. Jour., liii., 1840, case 1., p. 96.	35	M	Tin-smith; intemperate; subject to palpitation; result of strain in lift-	Aneurysm at commencement of aorta, the size of the fist, involving the three sinuses of Valsalva.	Projected into the right auricle, and opened into its cavity by two oval openings; projected also into the left auricle.	Heart large and cavities dilated, valves healthy, pericardium uni-	Œdema and lividity of upper part of body, and great dyspnœa. Double bellows-murmur at cardiac and sternal regions. Delirium.

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
Dr. Peebles's case. M. C. T., vol. xxiii., case 7.			ing heavy weight a month before death.			versally adherent.	
6. Ibid. Case 2, p. 99. Dr. Alison's case. M. C. T., vol. xxiii., case 10.	36	M	Intemperate; symptoms commenced six months before death, and became exaggerated after admission.	Aneurysm the size of an orange, immediately above the valves.	Pressed upon the left auricle; and opened into the pulmonary artery by a transverse slit with jagged edges one inch and three-tenths long, one inch and a half above the valves.	Heart large; two aortic valves diseased and incompetent.	The opening probably only commenced a few hours before death. General cardiac symptoms previously, and a sudden fatal accession.
7. Ibid. Case 3, p. 101. Dr. Graham's case. M. C. T., vol. xxiii., case 11.	60	M	No history, except that a month before admission into the Hospital he was seen by a medical man, and found to be suffering from cardiac symptoms.	Ascending aorta dilated, and great dilatation also of descending portion of arch. Small infundibular-shaped aneurysm arose from right side of summit of dilatation of descending aorta, and was about one inch long. The opening from the aorta would admit the thumb,	Opened into left branch of pulmonary artery by a rounded aperture, with fringed edges, one quarter of an inch beyond the bifurcation of the vessel. The canal occupied the situation of the ductus arteriosus in the fœtus, but was not thought by Dr. Reid to be a dilatation or reopening of the duct.	Hypertrophy and dilatation of heart, with disease of the aortic and mitral valves.	Death shortly after admission into Hospital.

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
				but that into the pulmonary artery was only as large as the carotid or subclavian.			
8. Ibid., vol. liv., 1840, p. 114. M. C. T., vol. xxiii., case 12.	53	M	Gentleman; strong bronchitic symptoms of some months' duration.	Aneurysm extended from upper part of sinuses of Valsalva to origin of arteria innominata and would contain the fist.	Opened into the trunk of the pulmonary artery by a ragged fissure nearly one inch and a half long.	Heart healthy.	Sudden accession of dyspnœa, followed by insensibility and death in four minutes.
9. Smith, Proceedings of Path. Soc. of Dublin, 1839-40. Dublin Journal, vol. xviii., 1841, p. 164; and Stokes on Diseases of Heart and Aorta, 1854, p. 554.	22	M	Porter; healthy till three months before death, when he became subject to dizziness and faintness followed by palpitation and pain in the region of the heart, and dyspnœa.	Aneurysm at the commencement of the aorta.	Small opening into the pulmonary artery near its origin, with thickened and rounded edges; evidently of old date.	Left ventricle dilated but not hypertrophied; right ventricle somewhat thick.	Pale and bloated face, blue lips, orthopnœa, intermittent pulse, intense fremissement over whole præcordia, and bruit with systole. Dulness from 2nd to 8th rib. Epileptiform attacks, and death after one. Opening supposed to have formed about four months before death.
10. Munro, Hope on Diseases	24	M	Porter; ten years before had rheu-	Whole ascending aorta dilated into a large, irregular sac,	Two openings from the aneurysm into the pulmonary artery, one	Heart more than twice its natural	Great dyspnœa, cough, and expectoration; palpitation; action of heart tumultuous; pulse

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
of the Heart, &c. 3rd. ed., Lond. 1839, p. 469. Med. Chir. Trans., vol. xxiii., case 9.			matism. Ac. symptoms commenced with an attack of pneumonia ten weeks before death. Afterwards had dyspnœa, palpitation, œdema of lower extremities, and swelling of abdomen.	which adhered firmly to the pulmonary artery. Internal coat reddened and rugose, with numerous cartilaginous plates advancing to ossification.	inch and a half above the valves; the larger capable of receiving the point of the little finger, and the smaller a crow-quill; and both being regular, round, and cartilaginous; a third opening, with thin and ragged edges, existed near the arch.	size, pale, flabby, and blunt at the apex; cavities dilated; valves healthy, except aortic, which were thickened.	large and thrilling, afterwards intermittent; countenance tumid and livid; abdomen distended, lower extremities œdematous. Dulness on percussion increased, first sound with soufflet audible over whole front, and at back on both sides of spine, but most distinct at sternum; second sound short, and obscured by first.
11. Roe and Thurnam, Med. Chir. Trans., vol. xxiii. (S. S., vol. v.), 1840, p. 323, case 7. In this paper the author refers to four preparations of aneurysms, which had opened into the	33	M	Baker; rheumatic fever twenty years before death, and pleurisy of left side three years before. Eleven weeks before, suddenly felt something	An aneurysm of the right anterior aortic sinus immediately above the valve, which would contain a small orange, and was lined by fibrinous coagula; lining membrane of aneurysm and aorta atheromatous.	The aneurysm projected into the mouth of the right ventricle and pulmonary artery, and involved the valves. Two rounded apertures of communication with the ventricle, one the size of a No. 4, the other of a No. 7, bougie.	Hydropericardium. Heart nearly double its natural size, and weighed sixteen ounces and a half. Hypertrophy with dilatation; valves incompetent.	Face pale, but lips livid; superficial veins, especially left jugular, very tumid; hurried breathing, cough, and expectoration of a brownish colour; pain in præcordia, and extending to spine; extremely jerking pulse; dropsy of extremities; superficial sawing sound supplanting natural sounds, very intense in second left intercostal space, two inches from sternum, very loud with systole, less

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
pulmonary artery, as existing at St. Bartholomew's, at the Royal College of Surgeons, and in the Museum of the Faculty of Medicine, Paris.			give way in the region of the heart, when lifting a heavy weight, and this was immediately followed by weakness and faintness, with oppression at the chest, palpitation, and pain, and œdema of ankles.				so with diastole; continued, though less intensely, during interval; very distinct purring tremor at same spot. Dulness much increased, and extending to second rib.
12. Law, Dublin Journal, vol. xxi., 1842, p. 443.	42	M	—	Aneurysm at posterior and right side of ascending portion of arch, the size of a small orange, with rough lining membrane.	Pressed upon the vena cava superior, and the coats where in apposition were partly adherent; about an inch above the heart, a circular opening about two lines in diameter.	Pericardium adherent; aortic valves healthy.	Upper parts of body of a dark, livid hue, as in a case of cholera. Sudden accession of symptoms when walking; and immediately afterwards great distension of veins of neck and thorax, and lividity of upper parts of body. Never any morbid sound. Pulse at wrist feeble, and in femoral arteries strong. Survived six days.

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
13. Beck, Med. Chir. Trans. vol. xxv. (S. S., vol. vii.), 1842, p. 15.	31	M	Surgeon; always short-breathed; but enjoyed good health till after suffering from mental anxiety six years before death. Became much worse three years before, suffering from dyspnœa and anasarca.	Dilatation of right sinus of Valsalva.	The dilatation communicated with the right ventricle by two small apertures. There was also a communication between the ventricles below the sac.	The right and left aortic valves were much thickened. Heart two and a half times the natural size.	Dyspnœa, oppression, vomiting, and syncope. There was a superficial murmur with the second sound, most distinct at the base, and tremor.
14. Henderson, Lond. and Ed. Monthly Journal, vol. iii., 1843, p. 457. Own notes in Pathological Register.	41	F	Symptoms of cardiac disease commenced after a chill, with pain at the chest, followed by vertigo and palpitation. He had had acute	Aneurysm of left side and front of ascending aorta; originating about half an inch above valves by aperture size of half a crown. Sac extended from heart to level of arch, and was constricted in the middle at	Bulged into right ventricle and origin of pulmonary artery, and opened into the ventricle by an aperture with very thin edges, about the size of a pea, situated immediately below the valves.	Pericardium adherent by loose attachments. Heart natural. Aorta not much dilated, and its coats healthy.	Sudden death about seven months after first accession of symptoms; pulsating tremor to left of sternum at the upper part, with increased dulness over large space; systolic murmur at fourth and fifth left cartilages, with loud second sound. Great pain at intervals, extending from region of heart and down left arm.

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
			rheumatism five years before.	point of attachment of pericardium to aorta.			
15. TRIPE, Lancet, 1844, vol. ii., p. 221. Case at London Hospital in 1842.	36	M	A seaman; died the day after admission.	An aneurysm capable of containing an ounce and a half of blood, originating by a fissure an inch and a quarter long, behind the posterior aortic valve. The sac contained coagulum.	The aneurysm opened into the right auricle by two circular openings, the size of peas, situated just above the auriculo-ventricular aperture.	Heart nearly double its natural size from hypertrophy and dilatation of left ventricle. Aortic valves thickened, indurated, and ossified. Great dilatation of right side.	Ailing for some time with cough, dyspnœa, and palpitation. Face and surface of body livid; haemoptysis; regurgitant pulse. Bruit over whole precordia, with the second sound, and continued during the interval; loudest at the sternum at the level of the third rib; murmur also at the base, and in the course of the vessels with the first sound.
16. PEACOCK, London and Edinburgh Monthly Journal, 1845, vol. v., p. 16.	48	M	A horse-keeper; of very intemperate habits; attending to his work till occurrence of fatal symptoms, and previous his-	An aneurysm the size of a duck's egg, commencing a quarter of an inch above the attachment of the right and posterior semilunar valves, involving the anterior and right side of the vessel, and terminating a quarter of an inch	The aneurysm pressed upon the descending cava, and opened by two round apertures, each the size of a large bougie, into the right auricular appendage, and threatened also to burst into the pericardium.	Pericardium universally adherent by thick layers of condensed membrane. Heart large; fatty degeneration of muscle	Face sallow and puffy, œdema of extremities, and effusion in abdomen. Suddenly seized with dyspnœa, vomiting, and syncope, and died in eighteen hours.

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
			tory not known.	below the arteria innominata; lining membrane of sac and artery with osseous plates and atheromatous.		and much fat on surface. Great hypertrophy and dilatation of left ventricle, and dilatation of right ventricle.	
17. TURNBULL, Lancet, 1845, vol. ii., p. 91.	41	M	A seaman; cardiac symptoms came on after he had fallen down a hatchway and injured his left side, five months before death; seriously ill about two weeks.	Aneurysm originating immediately above the valves, and extending so as to involve the arteria innominata; several smaller pouches from sac; and internal surface congested and showing tendency to ulceration; whole aorta somewhat diseased.	The aneurysm opened, by an aperture in one of the pouches, obliquely into the pulmonary artery, just above the valves; and by another, direct and size of a small quill, into the right ventricle, just below the valves. The aneurysm projected into the pericardium, and layers were there adherent.	Heart rather larger than natural; considerable hypertrophy of left ventricle, and of columnæ carneæ of right.	Increased dulness, distinct purring sensation at base, and a loud and harsh double murmur, continuous, but more intense with the systole. At the apex the two sounds heard, but obscured by the murmurs.
18. Cossy,	45	F	Long subject to pal-	Aorta dilated from origin to left subcla-	Opening into the vena cava superior, fifteen	Heart somewhat large;	Swelling of face and upper extremities, and lividity of lips and

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
Archiv. Gén. de Méd., 4me série, t. ix., 1845, p. 33.			pitation; gradually recovered, and was then suddenly seized with vertigo, etc.	vian artery, and an aneurysm on the convex side, beneath the arteria innominata, size of hen's egg.	millimètres (·59 E. I.) below the entrance of vena innominata, nine millimètres (·35 E. I.) long and five wide.	valves natural.	face, followed by œdema of lower extremities. First sound replaced by a bruit, which was continued through the interval of silence, heard over the front and behind; second sound natural. Died three or four days after admission into hospital.
19. Rokitansky, Krank. der Arterien, Wien, 1852-7, Beob., Taf. x., p. 51. In this work, another case is related in which an aneurysm opened into the pulmonary artery, and three in which the communication was with the right pulmonary branch. In all these the openings had closed.	49	M	Copperplate printer.	Aneurysm originating from right side of aorta, and involving whole ascending portion, with a smaller sac, about the size of a walnut, between the aorta and pulmonary artery.	The smaller sac opened by an irregular-edged and triangular-shaped opening, four lines and a half long, into the trunk of the pulmonary artery, shortly above the attachment of the right and posterior valve.	Heart considerably enlarged, and loaded with fat; both ventricles, and especially the left, dilated.	Sudden death.

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
20. Ogle, Path. Trans., vol. iv., 1852-53, p. 114.	27	F	Had suffered from palpitation and dyspnœa for three or four years, but had been worse for a few weeks.	Aneurysm of aorta at inner and posterior part, immediately above valves, size of small hen's egg. Ascending aorta rough and atheromatous.	Aneurysm opened by an oval, oblique aperture, three-fourths of an inch long, into the pulmonary artery, about a quarter of an inch above the valves, which it involved.	Right and left ventricle dilated.	Died about two months after accession of more urgent symptoms. Dyspnœa, cough, bloody expectoration, palpitation, irregular and jerking pulse, and vomiting; face pale, lips blue, but not marked cyanosis; systolic murmur in præcordia, loudest at left side of sternum, opposite third cartilage, clear diastole sound on right, but none on left of sternum. Tremor with the systole.
21. Herapath, Med. Association Journal for 1853, p. 683.	55	M	Intemperate. Taken with pain in the epigastrium and nausea, shortly after having taken food, followed by vomiting and prostration of strength.	Aorta atheromatous and dilated throughout the arch; a transverse laceration of the coats at commencement of descending portion, three-quarters of an inch long; no distinct aneurysmal pouch.	The coats of the pulmonary artery were adherent to the dilated aorta, and just above the valves there was a laceration an inch long.	Heart large and flabby; valves healthy.	Died about a day after the commencement of illness, and one or two hours after the more severe symptoms indicating the rupture appeared.

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
22. Mayne, Dublin Journal, 1853, vol. xliv. (N. S., vol. xvi.), p. 257.	50	F	Suffering from dyspnœa several years.	Enormous dilatation of the arch of the aorta, and extending two inches down the descending portion. Inner coat atheromatous and diseased. Right and left vena innominata and the descending cava were pressed upon and adherent to the dilated aorta.	Free communication between the dilated aorta and the vena cava superior, at a point about two inches above the origin of the aorta.	Heart healthy.	Suddenly seized, while laboriously occupied, with sense of tightness in throat, followed by dyspnœa, giddiness, and marked cyanosis and swelling of face, neck, and upper extremities, and upper part of trunk, with great venous engorgement and injection of eyes; heaving impulse at second right cartilage, with superficial bruit there and over front of chest; purring tremor in veins; no œdema of lower extremities. Communication apparently occurred eight days before death.
23. Beau, L'Union Médicale, t. vii., 1853, p. 374.	39	M	Sailor; of intemperate habits; suffering for years from cardiac symptoms.	Dilatation of the commencement of the aorta, with two aneurysms at the right and left side projecting into the right and left auricles; that on the right side as large as a hen's egg, that on the left double that size.	The left aneurysm ruptured into the left auricle by a fissure a centimètre (·39 E. I.) in length.	Heart twice the natural size; no valvular disease.	Committed a debauch, and soon after seized with aggravation of former symptoms, and died in about an hour.

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
24. Goupil, Arch. Gén. de Méd., Série 5me t. v. (1855, t. i.), p. 725.	58	M	Suffered from shortness of breath from birth, but worse twelve years before death. Œdema of the lower extremities for three or four years.	The inner coat of aorta was diseased from its origin to the abdominal portion; immediately above the valves it became dilated, and on the right side there was an aneurysm the size of a hen's egg, which arose five centimètres (1·9 E. I.) above the origin; it pressed upon the right auricle and vena cava superior and the right bronchus and pulmonary artery; it contained adherent clots.	The aneurysm opened into the vena cava superior by an oval opening thirty-five millimètres (1·26 E. I.) in circumference, with unequal and red edges, immediately below the entrance of the vena azygos. Beyond the aneurysm the aorta gradually resumed its natural size. The obstruction to the vena cava was diagnosed during life.	Left ventricle very large; right ventricle small. No valvular disease.	Suddenly seized, when excited by anger, with insensibility, followed by palpitation, injection of conjunctivæ and lividity of face, swelling of neck, and excessive dyspnœa. Great lividity and œdema of upper parts of body, and, except slight œdema of ankles, none of lower extremities. A soft murmur was heard at the base and on the right side of sternum with the systole, and prolonged into the silence; a harsher and stronger bruit with the second sound. Pulse small; action of heart violent. Sudden death after about a month.
25. J. H Bennett, Clinical Lectures, 3rd. ed., 1859, case cix., p. 595.	33	M	Symptoms commenced five months before death, with pain, followed by a sense of something having given way below	Aneurysm, the size of a large walnut, between the aorta and pulmonary artery, originating immediately above the root of the aorta.	Transverse communication with the pulmonary artery, four lines long, situated an inch above the valves; superior vena cava also compressed.	Left ventricle somewhat large; right ventricle hypertrophied and dilated. Heart weighed 15 ounces and a half.	Pulse irregular; anasarcous; soft, blowing, systolic murmur, and natural second sound at apex; at junction of third left costal cartilage with sternum first sound loud, prolonged, and blowing; second, short, abrupt, and rasping; over manubrium, rough, continuous, blowing murmur occupying both sounds.

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
			the ensiform cartilage, hæmoptysis, and discharge of blood from rectum; dyspnœa and œdema of lower extremities.				
26. M. Pierreson, Bullet. de la Soc. Anat., 2me série, t. v., 1860, p. 198.	61	M	Formerly in the army and afterwards a labourer. Symptoms commenced one year before death with pain in chest, followed by dyspnœa and œdema of lower extremities.	Three centimètres (1·17 E. I.) above aortic valves, on left side, a large biloculate aneurysm arose, which contained soft coagula.	The aneurysm communicated by a small opening with the pulmonary artery.	Recent pericarditis; slight hypertrophy of left ventricle; valves healthy.	Orthopnœa; lividity of lips and face; œdema of lower extremities; powerful impulse of heart; pulsating tremor in second left intercostal space, near sternum; souffle with the first sound, and purring tremor; afterwards swelling of external jugulars.

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communica ion, etc.	State of Heart.	Symptoms, Physical Signs, etc.
27. WADE, Med. Chir. Trans., vol. xliv. (S. S., xxvi.), 1861, p. 211.	35	M	Railway-porter; after having lost blood by piles, began to have pulmonary symptoms six months before death. About two months before, strained himself, and after that the symptoms became aggravated.	An aneurysm, capable of containing small hen's-egg, originated above the right and left semi-lunar valves; a few small patches of atheroma in aorta.	Communicated with the pulmonary artery by a vertical slit about three lines long, with smooth and rounded edges, behind the posterior division of the pulmonary artery. There was also a second opening into the right ventricle, immediately below the valves, which was about four lines long, and had ragged and thin edges. This is supposed to have occurred shortly before death.	Heart large; valves healthy.	Increased cardiac dulness, especially in vertical direction; apex beating in sixth interspace; cardiac sounds, as heard over the cartilage of fourth rib, replaced by two murmurs; that with the second sound occupied the whole period of silence; a loud bellows-murmur heard also with the first sound. The murmurs were heard at the upper part of the chest, both before and behind. At the apex, a single systolic murmur was heard, and the second sound was distinct; purring tremor at the fourth cartilage. Sudden death after discharging much blood from the rectum.
28. TRIPIER, Thése de Paris, 1863. De l'anevrysme artério-veineux spontané de l'aorte et de la veine cave supérieure, p. 36, case	55	M	Travelling merchant; temperate habits, and enjoyed good health, except suffering occasionally from dizziness; sud-	On the right and posterior side of the aorta above the valves, a large aneurysm arose, which was ovoid in shape, and as large as the fist, and adhered to the pulmonary artery; it adhered also to the vena cava,	The aneurysm communicated with the vena cava superior by an aperture in the form of a button-hole, two centimètres (·78 E. I.) long; its edges were slightly broken, and very fine and near together. The opening	Fluid in pericardium; slight hypertrophy of heart; no valvular disease. Great congestion of membranes	When admitted, the swelling and cyanosis of head, neck, and upper part of trunk and upper extremities, and fore-arms, and the distension of the veins, were very marked; the parts beneath the base of the thorax not being at all involved. There was nothing remarkable as to the respiration, and the sounds of the

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
under M. Rambaud, at the Hôtel Dieu de Lyon.			denly taken at night with vertigo and dyspnœa, followed by swelling and lividity of the face and upper part of trunk; and these symptoms continued, when he was admitted into the hospital, two days after.	and the vein was flattened on its surface. The tumour contained some fibrinous and soft clots.	was two centimètres and a half (·97 E. I.) from the commencement of the vein. The vein, though flattened and contracted when in contact with the aneurysm, was permeable throughout, and again expanded below.	and substance of the brain.	heart were natural; but three centimètres (·78 E. I.) from the right side of sternum, beneath the clavicle, there was dulness, pulsation, and a soft, feeble, systolic murmur; pulse small and frequent; great agitation, followed by delirium, and lapsing into coma, with increased evidences of obstruction to the venous circulation. The patient died thirteen days after his admission, and fifteen after the marked occurrence of the symptoms.
29. Lichtenberg, Path. Trans., vol. xvi., 1864-5, p. 96.	29	M	Enjoyed good health till he met with an accident, for which amputation of the left arm was performed. Went on	Aneurysm originating by an opening eighteen French lines in circumference, from the posterior sinuses of Valsalva. The sac was about an inch long, and projected into the right auriculo-ventricular aperture. It was	The sac opened at its end into the auriculo-ventricular aperture, by an opening capable of admitting the handle of a steel pen, or eight lines in circumference.	Heart hypertrophied and dilated, but flabby, and with fatty degeneration; aortic valves somewhat thickened; appearance	Suffered from palpitation, dyspnœa, severe vomiting, and increased temperature; the urine became albuminous, and he had a peculiar "grey, unearthly look," and died collapsed. Fremissement in the lower cardiac region, each sound of heart replaced by a strong bruit, principally heard at the base and at the left of the sternum.

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
			well after the operation till the thirty-seventh day, when he was seized with cardiac symptoms; and he died thirteen days after their accession.	somewhat wider than the opening from the artery, and had a smaller pouch projecting from its side. Atheromatous deposits in aorta.		of early pericarditis.	
30. GULL, Lancet, vol. iv., 1864, p. 410.	34	M	Formerly a soldier; suffered from dyspnœa and inability for hard work for several years.	Aneurysm involving front part and side of aorta, extending from an inch above the origin to the arteria innominata, and containing recent clot.	Opened into the vena cava superior, by an aperture the size of an ordinary lead-pencil.	Recent pericarditis; heart healthy.	Five weeks before death, swelling and venous engorgement of neck and upper extremities and upper part of trunk, so as to form a remarkable contrast to lower part and extremities; no murmur with the heart's sounds, but a vibratile thrill over the whole right side of chest, synchronous with the diastole; soft whizzing murmur at upper part of sternum, above only with the diastole, below also with the systole; pulse small and regular, and the right less than the left; cough and frothy expectoration.

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
31. Moxon, Path. Trans., vol. xvii., 1865-6, p. 80. Mr. G. T. Hawkins's case.	45	M	Seaman, and afterwards gold-digger; subject for five months to occasional pain in the heart at night, and vomiting in the morning; addicted to spirit-drinking.	Ascending aorta dilated and diseased; an opening, the size of a shilling, just above the valves, into an aneurysm as large as a walnut, containing fibrinous clots.	The aneurysm projected into the left auricle, and burst into it by a large rent.	Heart slightly hypertrophied.	After eating a full breakfast, felt sense of distension in the stomach, but walked out and ate his dinner; after that had violent retching and vomiting, and pain in the stomach; followed by restlessness, cold sweats, faintness, and death in four hours.
32. Peacock, Paper (*Antea*, p. 111.)	26	M	Enjoyed good health till an attack of rheumatic fever four years before death; symptoms commenced about two months before with	Aneurysm, the size of a large hen's egg, originating above the point of attachment of the right and left aortic valves.	Aneurysm projected into the pericardium, and was very thin in places; it also pressed upon and obstructed the origin of the pulmonary artery and the base of the right ventricle, and had destroyed two of the valves. There was an opening with very thin	Extensive old adhesions of pericardium; great hypertrophy and dilatation of heart, especially of left ventricle; extensive disease	Suffered under aggravated cardiac symptoms; cheeks flushed, lips livid; distension of jugulars; œdema of face and upper extremities, as well as of other parts of body; dulness greatly extended, and especially in vertical direction; apex beat in fifth interspace; at base, loud systolic murmur, followed by loud, ringing, diastolic sound, and that by a slight murmur; at

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
			pain in right hypochondrium, shortness of breathing, dry cough, and swelling of lower extremities.		edges, about three or four lines long and two broad, by which the sac communicated with the origin of the pulmonary artery at level of valves.	of two aortic valves. Heart weighed twenty-eight ounces.	apex only the systolic murmur, and second sound without murmur; pulse somewhat regurgitant; liver enlarged.
33. Roberts, Brit. Med. Journ., May 2, 1863, No. 383, p. 421.	28	M	Somewhat intemperate; ascribed to cold; cough, and difficulty of breathing, followed by symptoms of cardiac disease. Two months' duration.	Aorta dilated to one-third more than its natural calibre, for an inch and a half from its origin. From this dilated part, and immediately above the right and left sinuses of Valsalva, there sprang a wide-mouthed aneurysmal pouch, resembling in size and shape the half of a large walnut shell.	The aneurysm was funnel-shaped, and projected fully half an inch into the cavity of the pulmonary artery, immediately above the valves. In the centre of this projection there was a round opening, large enough to admit a good-sized pea, with very thin, smooth, membranous edges; and on each side was another small opening. Pulmonary artery not dilated or atheromatous; lining membrane	Pericardium adherent throughout by old attachments; heart of very large size, and all its cavities dilated and the ventricles hypertrophied, especially the left. Aortic orifice somewhat large, but valves	Orthopnœa; lips livid, face pale; some ascites; considerable œdema of legs and thighs; cough, dyspnœa, expectoration with streaks of blood; pulse quick and jerking, and visible in superficial arteries; præcordial bulging; heart beat in fifth interspace, half an inch outside nipple, greatly increased dulness, both vertically and transversely; a superficial, loud, harsh double murmur, or a single murmur consisting of two parts and covering both sounds, heard most intensely at the upper level of cardiac dulness, and between sternum and

Author and Reference.	Age.	Sex.	History.	Seat of Aneurysm, etc.	Seat of Communication, etc.	State of Heart.	Symptoms, Physical Signs, etc.
					of aorta in dilated part rough and atheromatous, and in places calcareous.	closed it nearly, if not perfectly.	nipple; propagated to the vessels in the neck, and heard much less intensely at the apex; the murmur was accompanied with an intense vibratile thrill; voice weak, and cough-sound a little metallic. Incompetency of aortic valves diagnosed, and aneurysm suspected.

Dr. Peacock, 21*st of January*, 1868.

13. *Ulceration and disorganization of the aortic valve, to the whole of which a firm clot was adherent. Pericarditis. Sudden death.*

Henry M., aged 30, applied at the out-patient room, complaining of pain in his joints, of three weeks' standing, and of acute pain at the chest, which had lasted for six days. The pain in the joints was inconsiderable; he was able to walk to the hospital. On examination, a pericardial friction-sound was heard. About six o'clock a.m., on the morning after his admission, he got up of his own accord and went to the water-closet, where he was found dead.

The aortic valves are extensively ulcerated and broken down, with a large quantity of fibrine deposited on, and adherent to them. At first sight, they appear to be only two in number, but in the recent state it was obvious that they had originally had the usual disposition. The right cusp is perforated, and has a quantity of fibrine adherent to it. The mitral cusp is still more ulcerated and disorganized, being almost completely destroyed. To the remnant of what was the free margin of the valve, a mass of fibrine is adherent. In the recent state this formed the lowest part of a firm fibrinous clot, which reached some distance up the aorta, and was smoother and considerably larger than it is now, and more or less moulded to the form of the aortic orifice. It did not occupy the position it now assumes below the aortic orifice, but had evidently moved up and down in the aorta.

The pericardium was everywhere covered by rough adherent lymph, but contained little fluid. The rest of the viscera were normal.

Dr. W. S. Church, 21*st of January*, 1868.

Report on Dr. Church's specimen of diseased aortic valves, with adherent clot.—Having examined the preparation presented by Dr. Church, we agree in his opinion that the fibrinous deposit on the aortic valve was one which had formed during life by adhesion to the disorganized structure of the valve.

Dr. Thomas B. Peacock.

Dr. Wilson Fox, 18*th of February*, 1868.

14. *Ulceration and disorganization of the pulmonary valve.*

This specimen closely resembles the last one. Priscilla B., aged 40, when admitted into the hospital, was supposed to be suffering from rheumatic inflammation in the left knee-joint. After admission, her symptoms more closely resembled those of pyæmia. At the *post-mortem* examination, the synovial membrane of the left knee-joint was found thickened and unduly vascular, the cartilage over the condyles of the femur was ulcerated here and there, and the bone was exposed round its margin. The cusps of the pulmonary valves were almost destroyed, being mere ragged shreds; attached to the remnants of the left cusp was a deposit of tawny-coloured fibrine. The other viscera were healthy. No puriform deposits were found in the lungs, nor any traces of emboli.

Dr. W. S. Church, 21*st of January*, 1868.

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15. *Remarkably small heart of an adult, occurring in a case of pyloric obstruction. Death from inanition.*

The heart, one of the smallest of which I have been able to find any record, was taken from the body of Jane J., aged 47, who died in St. Bartholomew's Hospital, under the care of Dr. Black. During the five months that she was in the hopsital, she presented the usual symptoms of pyloric obstruction, and a tumour of considerable size could be felt in the pyloric region. The symptoms had commenced more than a year previously to her admission. The absence of any hæmatemesis, the slight amount of pain she suffered, the mobility of the tumour itself, and the extreme protraction of the case made the diagnosis of the disease somewhat doubtful.

As death from such exceedingly gradual starvation is somewhat unusual, I ought to append a few notes of the *post-mortem* condition of the viscera. The emaciation of the body was extreme. There were no bed-sores. On opening the thorax, the lungs collapsed to a remarkable degree; they were almost completely bloodless; the lung-tissue appeared quite healthy; unfortunately the weight of the lungs is not recorded. The heart in its recent state weighed only three ounces and one drachm. Its tissue was firm, but rather brown in colour; all the valves were natural, the aortic and pulmonary orifices of great proportionate width. The foramen ovale presented a small valvular opening. The left side of the abdomen, down to a little be-

low the crest of the ileum was occupied by the stomach, no part of which, however, extended beyond the median line of the body. Around the pylorus was a hard mass made up of the thickened and indurated walls of the stomach; the glands in the neighbourhood being neither enlarged, nor adherent to the mass. On laying open the stomach, the pyloric orifice was found reduced to the size of a small goose-quill. The mucous membrane was perfectly smooth, though just at the pylorus it was somewhat mammillated. About one inch and a half from the pylorus the mucous membrane formed an elevated ridge, which marked the boundary of the disease. The mucous membrane from the pylorus to this ridge was firmly adherent to the under-lying tisues. Over the rest of the stomach it was natural. The muscular coat was everywhere greatly hypertrophied. All the other organs, though reduced in size, appeared healthy in structure. The liver weighed twenty-five ounces and a half; the spleen one ounce and a half; the kidneys together five ounces and a half. The large intestine contained a small quantity of healthy fæces. Portions of the thickened wall of the stomach from near the pylorus exhibited under the microscope the ordinary appearances of scirrhous cancer, consisting wholly of fibrous tissue, excepting close to the mucous surface, where a few rounded cells were seen. Dr. W. S. Church, 21*st of January*, 1868.

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16. *Diseased aortic valves.*

The specimen consists of the root of the aorta, with its valves and attachments to the heart. From one of the segments there is a club-like mass projecting upwards into the channel of the aorta; this club-like mass is about half an inch long, by a quarter of an inch wide; it is calcareous and hard, and, as the segment it is attached to is soft, it is very moveable. Upon the wall of the vessel, on its inner face, there is a hole of about the size of the orifice of a coronary artery, which it indeed resembles; this hole is sharply defined and penetrates the coats of the vessel to some depth, so that, if carried but little farther, it must have gone entirely through. It is situated just at the point of the arterial wall, which is touched by the hard club-like mass on the valve, when the valve is thrown against the wall of the aorta, as it is in the systole of the heart. I do not think there is any doubt that the hole is an erosion worked in the artery by the sharp contact of the hard mass of vegetation, repeated at each beat of the heart. The

specimen offers a very neat instance of the effects of attrition in valvular disease of the heart. Such sharp friction of elevations on the meeting faces of the valves is an important local aggravation of the inflammation in endocarditis. Dr. Moxon, *21st of January*, 1868.

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17. *Aneurysm of the left ventricle of the heart, with partially ossified walls, winding round the root of the aorta.*

The specimen was taken from a patient under Mr. Shaw's care, admitted into the Middlesex Hospital for cancerous disease of the uterus, latterly extending into the bladder. In addition to these complaints, she had symptoms of disease of the heart—a sense of tightness in the chest and short breath, with occasional palpitation. The physical signs were, briefly, an unnatural area of dulness corresponding in position to the second and third cartilages, and extending over to the right of the sternum; a very loud systolic bruit heard all over the chest, chiefly at the base of the heart; and an unusually strong cardiac thrill. The sphygmograph showed evidence of prolonged arterial expansion. Death took place gradually with no further heart-symptoms.

The *post-mortem* examination revealed remains of old tubercle in the lungs, with recent bronchitis and some pneumonia of the right base; chalky matter in the enlarged and pigmented bronchial glands; recent peritonitis chiefly about the pelvis; more or less sacculation of both kidneys; and extensive cancerous destruction of the uterus and vagina, invading the bladder, but not affecting the glands or remote viscera, together with the following condition of the heart:—

One felt through the pericardium a very hard mass in the situation of the auricles, and on cutting open the serous sac (which showed no sign of old or recent inflammation), the heart appeared as if the auricles were greatly distended, the swelling having a stony hardness. More careful examination showed both auricles to be free, as also the right ventricle, and none of the valves to be affected; but leading out from the upper part of the left ventricle, behind and below the aortic opening, was a large pouch extending backwards, upwards, and to the left, with a patent orifice two inches in diameter. (See Plate VII.) The endocardium at this spot looked opaque and thickened, but no distinct lesion could be detected. Pulling away from the cavity some of its contained firm stratified fibrinous deposit, and inserting the finger into the opening,

this was found to lead on into a large canal capable of taking four fingers, and reaching round the root of the aorta, so as to form a bulky projection above the base of the heart, and completely encircling the viscus. Opposite to the centre of the pulmonary artery [laid open] a sulcus seemed to mark a former division of the long pouch into two smaller ones, and at first suggested the idea of the original formation of two independent cysts which had opened into one another, and then into the ventricle. There seemed, however, no doubt of the true nature of the case—that it was a very unusual form of aneurysm of the left ventricle of some considerable age, the walls of which had undergone calcification to a great extent and were now studded with bony plates and cartilaginiform substance, and which was nearly filled with firm, adherent, stratified, pale fibrine—a central layer of softer reddish clot suggesting more recent changes. The canal had a diameter generally of two or three inches, the walls being from two to three lines thick, and composed of fibroid material, studded with bony plates. The rest of the heart seemed fairly healthy, excepting some general thickening of the left ventricle, and except of course that the aneurysm had considerably constricted the orifices of the aorta and pulmonary artery, and pressed upon the auricular cavities. There was comparatively little atheromatous change in the aorta. The left coronary artery was natural and quite patent, winding over the aneurysm to reach the septum ventriculorum, but the right vessel had been affected by the pressure, so as to stretch its mouth and constrict, if not really to close, its calibre an inch from its origin.

Microscopical examination showed the tissue of the heart to be not appreciably diseased; striæ well marked, and no notable granular change; no trace of hydatid structure was found in the contents of the aneurysm.

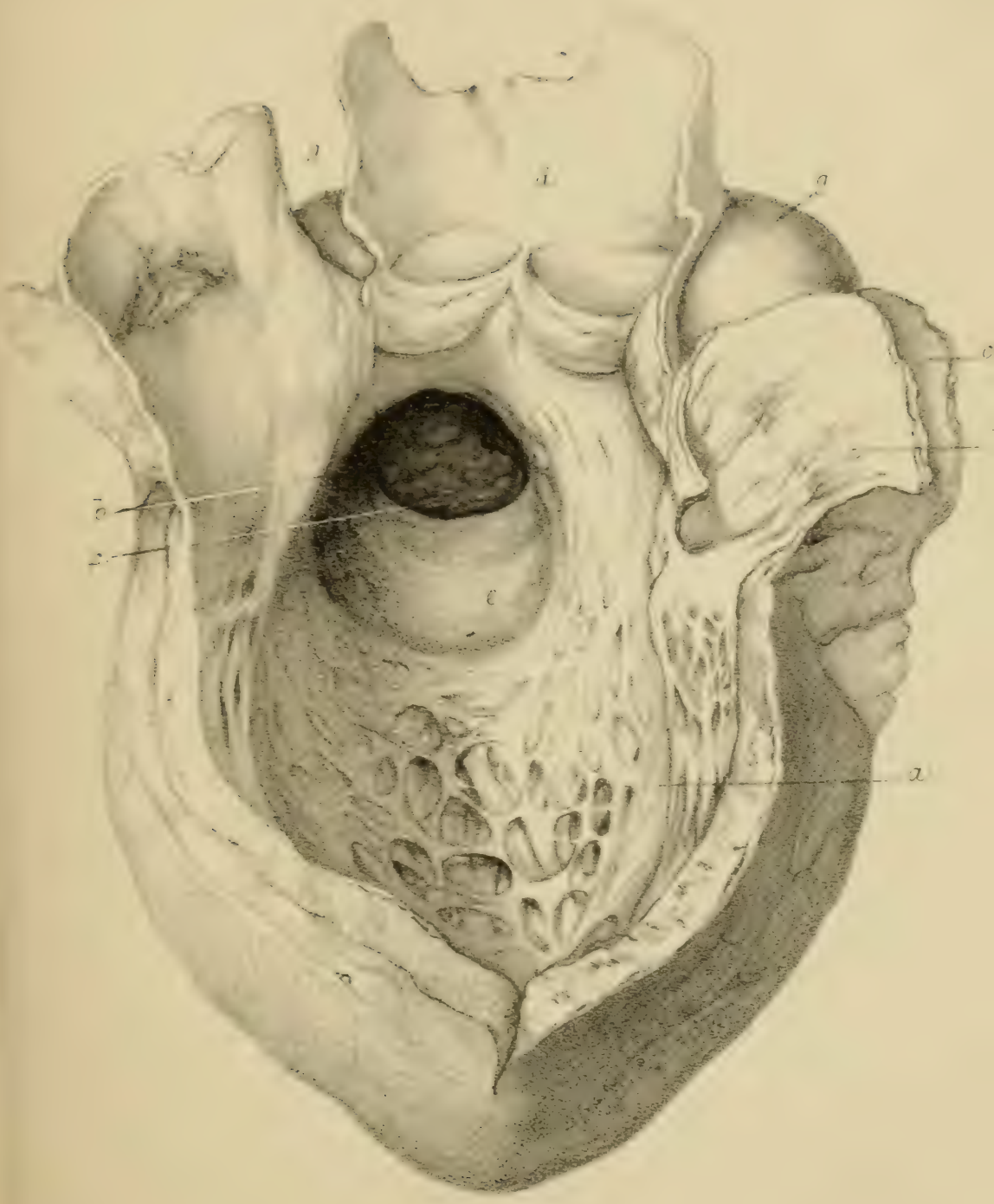
Remarks.—So far as I have been able to discover, this is a unique specimen of cardiac aneurysm of so great a size, occupying such a position. Of the eighteen cases already recorded in the *Transactions* of this Society,* in fifteen the pouch sprang from the left ventricle, and in six of these from the upper part of the cavity. One instance recorded by Dr. Bristowe, (Vol. V., p 93,) resembled the present in many points, but was only the size of a small hen's egg. Of the large number of cases collected

* One of the first cases related in the Pathological *Transactions* is an aneurysm of the left auricle, a condition so rare that Rokitansky speaks of only one undoubted instance on record, besides one in the pathological museum at Vienna.

DESCRIPTION OF PLATE VII.

This Plate illustrates Mr. Henry Arnott's Case of Aneurysm of the Left Ventricle of the Heart, with partially Ossified Walls winding round the Root of the Aorta. Drawn on stone by Mr. B. George (p. 149).

a, Interior of left ventricle; *b b*, interior of left auricle; *c*, exterior of right auricle laid open; *d*, aorta laid open; *e*, dilatation of ventricular wall leading to (*f*) orifice of aneurysmal dilatation, which in the recent state was nearly filled by an old adherent decolorized clot; *g*, *g*, bony wall of aneurysm winding round the aorta at the base of the heart.


a
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g

by Thurnam*—seventy-four in all—in fifty-eight the left ventricle was involved; but only nine of these are described as being of equal size with the present. The largest was one contributed to his store by Mr. Kiernan, a huge dilatation springing with constricted opening from the apex of the left ventricle, itself the size of a second heart and filled with laminated coagula. Six of the nine are said to have sprung from the apex of the left ventricle, or close to it; two from the middle of that cavity, and in one the exact position is not noted. It was doubtless this common position of aneurysmal enlargement at the left apex, occurring in conjunction with more or less hypertrophy of the rest of the ventricle, which led Breschet (who wrote the first monograph on the subject, in 1827,) to place the two facts in position of cause and effect. Dr. N. Pelvet,† in an exhaustive essay on the subject, published last year, condemns so hasty a generalization from few observations, and compares the various opinions as to the formation of these aneurysms at some length. His summing up may be briefly stated thus:—

Some, as Breschet, Corvisart, and Lobstein, regard them as resulting from an incomplete rupture. That it is an ulceration of the endocardium, which is the primary lesion, is held by Kreysig, Lænnec, and Bouillaud. Some admit an alteration of the lining membrane, without specifying its nature (Reynaud and Ollivier). Others perceive in it the consequence of an inflammatory softening (Dance, Chassinat, and Hartmann); while most modern authors regard the aneurysm as the result of a fibrous change in the wall, probably of inflammatory origin (Cruveilhier, Rokitansky, Craigie, Peacock, Forget, Mercier, and Thurnam).

In the specimen under consideration, it is not easy to determine the nature of the early changes which led to so extensive a dilatation. There is no lesion of the lining membrane detected at the mouth of the aneurysm, but the formation is clearly of considerable age, from its bony wall; and one would not expect now to be able to trace the signs of any original lesion, either of endocardium, or of muscular substance. In Dr. Pelvet's work, already referred to, a specimen is figured, and the case described at length, corresponding pretty closely with the present one in position, and looking not unlike what one may imagine this to have been in an earlier stage. A cavity, the size of a pigeon's egg, projects from the upper part of the left ventricle by the side of the root

* Med. Chir. Trans., Vol. XXI.

† Des Anévrysmes du Cœur, par. Le Dr. N. Pelvet, Paris, 1867.

of the aorta, communicating with the heart by three ragged ulcerated openings, two between, and one just below the aortic valves. This has evidently been the result of endocarditis leading to ulceration of the membrane, and subsequent bulging and fibroid degeneration of the remaining structures. On the auscultatory signs noted in the case under consideration, there is little room for comment. They seem to have resembled more those of aortic dilatation, than of any very unusual lesion, an idea borne out by the increased area of dulness. It is probable that hardly any blood found its way into the aneurysm during the last few weeks of life, when the patient was much exhausted, and in that case the only condition affecting the sounds of the heart would be the constriction of the orifices of the aorta and pulmonary artery by the surrounding bony swelling.

This preparation is now in the museum of the Middlesex Hospital.

Mr. Henry Arnott, 21*st of January*, 1868.

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18. *Case of ulcerative (or rather suppurative) endocarditis, in which sudden death occurred in a manner difficult of explanation.*

The patient was a discharged soldier, aged 30, who had lost an arm, and in former years had suffered from acute rheumatism and cardiac affection. He presented himself first in the out-patient department of the Westminster Hospital, and was examined by Dr. Anstie. At that time he complained of pain in the chest, and suffered from dyspnœa; the complexion was of a sallow tinge, like that of acute rheumatism; but there was a marked flush in the centre of each cheek. The pulse was rapid, and on auscultation commencing pneumonia of the right lung was detected. There was a history of rigors followed by fever, three days previously. On examination of the heart, a loud bruit, chiefly diastolic, was heard at the base of the heart; here it was very distinct; over the rest of the heart it was noisy, though confused, and it was nearly lost at the apex.

On the following day (December 10, 1867), the man was admitted into Westminster Hospital, under Dr. Basham; and thenceforward, till the 18th, nothing unfavourable occurred; on the contrary, the pneumonia ran a very straightforward and satisfactory course, and at the latter date was apparently in full process of resolution. The patient appeared quite comfortable on the 18th until the evening, when he suddenly developed curious psychical symptoms; from being civil and obliging, he became very morose and savage; the pulse got quick,

irregular, and thready, and in a few hours the man passed into a state of coma, with stertorous breathing, and died.

At the *post-mortem* examination, nothing could be discovered in the brain to account for the symptoms. Embolism had been suspected, and the vessels were minutely searched, as far as regards those of any considerable calibre, but nothing of this sort was found. The right lung showed, as was expected, the signs of hepatization beginning to resolve. The heart exhibited marked hypertrophy of its left ventricle, and there was old-standing disease of the mitral, and especially of the aortic valves. Besides this there was found, between the layers of one curtain of the aortic valve, a small abscess, about twice the size of a pea; and it was believed by Mr. Palmer, who made the *post-mortem* examination, that no pus had escaped from this until the scalpel accidentally laid it open. There were no signs of secondary abscess in any of the viscera, such as are produced by purulent infection; no plugging of the pulmonary artery; no renal or other disease to account for any blood-poisoning, which might have produced the remarkable cerebral symptoms that preceded death.

This case is remarkably obscure. The man certainly did not die of the pneumonia; and as certainly, something happened on the evening of December 18th, which gave a totally new turn to the case, and originated the cerebral mischief. These new symptoms occurred with a suddenness that irresistibly suggested embolism; but all the cerebral arteries of considerable calibre were found, after death, to be free from disease or obstruction.

Under these circumstances it is impossible to do more than to frame a purely hypothetical explanation of the death. Dr. Anstie therefore suggested that the symptoms bore a considerable resemblance to those produced in the experiments of Prevost and Cotard, and others, upon animals, in which very small substances were injected, in considerable numbers, into the carotid, and thence carried into the vessels of the brain. The foreign substances were not large enough to cause embolic obstruction of any artery of considerable size, but they blocked a number of fine capillaries, and immediately produced severe cerebral symptoms, ending with greater or less rapidity, but always quickly, in coma and death. It is possible that in the present case, fine granules, either pus-globules escaping by pin-hole perforations from the endocardial abscess, or minute clots carried by the pulmonary veins from the hepatized lung, had mingled with the circulation, and being carried to the brain, had caused a somewhat wide-spread obstruction of capillaries,

which was nevertheless not recognizable by the naked eye inspection though carefully made at the *post-mortem* examination.

Dr. Anstie *for* Dr. Basham, 21*st of January*, 1868.

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19. *Ulcerative endocarditis, with emboli in several arteries.*

I show parts of many organs from a case of great interest which came under *post-mortem* inspection yesterday. During life, the case passed for one of typhoid fever, and although the disease was of another nature, yet its symptoms were very deceptively like to those of typhoid fever. The patient was a young man, aged 21, who had been taken with pain in the limbs and back, headache, and shivering. He went to bed, and had kept his bed until admission, one week after the first attack. When he came in, it was at first doubtful whether his case was to be viewed as rheumatic or typhoid fever. He had pains in the limbs, but these were not localized, and he could move the limbs easily; his tongue was dry and brown; pulse, 120 to 116; his temperature, 101°·8; his bowels were rather loose, the stool being regarded as a characteristic typhoid stool. He died on the 2nd of February. He was unconscious for the last twelve hours, but before that time he spoke to the nurse, and was quite intelligent; in particular he "begged her pardon" at noon on the day of his death, because he struck her accidentally as she was lifting him. On inspection of the body, there were ecchymotic spots on the chest and abdomen. Ecchymotic spots were also found on the pleuræ, pericardium, larynx, stomach, intestines, and in the urinary bladder, giving the appearance that we associate with blood-poisoning, but the mesenteric glands were healthy, and the intestines, except for the spots, perfectly so also. The spleen was, however, large and soft, as in typhus: it weighed eighteen ounces and a half; but it had in it two large, pale, wedge-shaped, dark-bordered patches, quite of the kind called embolic patches. On examination of the heart, the nature of the case became evident: the aortic valves were much diseased; two of them were converted in appearance into heaps of rather loosely connected vegetations, and the common point of attachment of two of the segments was in an excavated state, as from ulceration. The excavated spot was in the concavity of the upward bend that the mass would make in the current during the systole. The mitral valve had a similar localized patch of disease, and it was remarkable how healthy were the remaining segment of the aortic valve and the rest of the mitral.

The blood in the heart was liquid; the kidneys had numerous recent and semi-recent embolic patches in them. The liver showed externally no sign of disease, but on opening up the right hepatic artery there was a plug in its second bifurcation, the plug being adherent; this shows, what might have been expected, that the common immunity of the liver from embolic patches is not due to any immunity of its artery from emboli, but must be due to some other conditions of its circulation. The brain externally showed no change, but on following the Sylvian artery, there were found two plugs of fibrine in the right vessel, and though nothing unusual was to be seen on superficial observation of the brain at that part, yet a stream of water immediately showed a decided softening there; the brain broke away at that part into a pulp, when under a stream that had no effect on the rest of the organ. I examined the ecchymotic spots in the bladder, and found by cutting fine sections of the mucous membrane at these spots, that there were emboli in capillary arteries where the spots were situated. In the right lung were two patches which were in their characters intermediate between apoplexies and pyæmic suppurations.

This case bears best the interpretation that the blood had been poisoned by the products of the endocardial ulceration. The state of the spleen, of the blood, and of the serous membranes, and the typhoid symptoms, together favour that view.

Dr. Moxon, *4th of February*, 1868.

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20. *Embolism of the splenic artery, with cancerous perforation of its wall.*

This specimen is from the same body which yielded the everted sacculus laryngis, that I have just shown. (See page 65.) The man had led a life of anxiety and disappointment as an unsuccessful schoolmaster. He had been a laborious student, and was a good Greek scholar. His symptoms had been very obscure; he generally denied having any pain; he never vomited, but he kept his bed, and could not eat,—not that food gave him pain, but he loathed it; he was not taciturn, but would always willingly and cheerfully give his account of his symptoms. One day he suddenly became faint and died. On examining the body, the stomach and alimentary canal were found full of clotted blood. This had come from the splenic artery, which was opened by a cancer, of foul, sloughy appearance, whose great size and ragged open

state surprised those who had seen how little of suffering he had. On examining the splenic artery, there was not any clot at the fatal opening, but in the spleen was found a patch of the usual appearance of those resulting from embolism, *i.e.*, paler and firmer than the rest of the organs situate at its anterior margin, and sharply bounded by a darker border. The embolism was proved by the presence of a plug of pale fibrine in the branch of the splenic artery that fed this part of the spleen. Putting these facts together, it seems most reasonable to conclude that the action of the cancerous ulcer during perforation of the artery caused a lodgement of solid fibrine on the inner face of the artery at the spot attacked, and that this solid fibrine had been detached and moved on by chance into the vessel in which it was found. I do not know of cases in which embolism has arisen from such a cause, but it seems far from unlikely that such cases happen. Thus, when an abscess or a cancer is about to perforate the carotid artery, we may expect as a possibility the formation and detachment of a clot to occur in the carotid, leading to a plugging of some cerebral artery, and consequent hemiplegia of the opposite side; or an abscess of the thigh prior to opening the femoral artery may cause the lodgement and detachment of clot in that artery and subsequent partial or total gangrene of the foot from embolism of the vessels lower down.

Dr. Moxon, *4th of February*, 1868.

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21. *Fibroid degeneration of the heart (syphilitic?) Aneurysm in the right ventricle and in the septum ventriculorum.*

Several specimens of aneurysm of the heart have been, at various times, exhibited to the members of the Society; but in no instance, as far as I am aware, has it taken the peculiar form which it does in the specimen under consideration. The specimen was taken from the body of a man, aged 31, a tailor, who was admitted into St. George's Hospital on the 1st of January, under the care of Dr. Wadham. He stated, that he had been ill for two years with cough and pains about the chest, and during that time he had wasted considerably. He had suffered from abscesses under the arm, eighteen months ago. No history of syphilis could be obtained. When admitted, he presented a dusky, sallow appearance. The heart was found to be much enlarged, and its apex was thrown downwards and to the right of the ordinary situation; the stethoscopic signs were very peculiar, but gave no clue to the real

nature of the disease; a loud bruit very near the ear was heard to the left of the pulmonary valves under the left clavicle. There was also a murmur accompanying the first sound to the left of the apex-beat; and a loud bruit accompanied both sounds just below the sternum. No bruit was audible on listening behind. There was an aortic regurgitant pulse. The patient was treated with wine and small doses of digitalis, but remained much in the same state for about a fortnight, when he died, somewhat suddenly. On one occasion he brought up about six ounces of grumous blood, apparently from the stomach.

Upon *post-mortem* examination, the heart was found to be very large, weighing twenty ounces; the cavities were entirely uncontracted, and contained a small amount of scarcely coagulated blood. The surface of the heart was very hard, and covered over with a layer of organized lymph, which was intimately adherent to the pericardium, and was evidently of very old standing. The cavity of the right ventricle was much dilated; the endocardium was much thickened, and of a pearly whiteness, owing to the deposition in it of a dense fibrous layer. Some of the smaller muscular trabeculæ consisted almost entirely of this fibroid material, having only a small amount of muscular tissue in their centres. The structure of the ventricle was generally pale, flabby, and soft, especially towards the apex, but was intersected by a number of fibrous bands and streaks which pervaded the tissue in all directions and proceeded inwards from the thickened lining membrane. Under the microscope it was found to have undergone extensive fatty degeneration; in some parts the muscular fibres were entirely broken up, and replaced by fat; in others, though the fibres were distinct, a large number of oil-molecules were seen surroundiug them. Just below the semilunar valves there was a pouch or aneurysmal dilatation, about the size of a pigeon's egg, and communicating with the ventricle by an odening sufficiently large to admit the little finger: this opening was, however, partially closed by a band of fibroid material stretching across it, probably one of the altered muscular trabeculæ. The sac was filled with decolorized fibrine, which was partially broken down and softened in its centre. The structure of the left ventricle was much more natural; its cavity was dilated. In the septum between the ventricles there was found to be a fluctuating swelling. This swelling proved to be a sac filled with blood and communicating with the aorta by a small opening, not sufficiently large to admit the tip of the little finger, at the bottom of one of the sinuses of Valsalva, immediately behind one of the aortic valves. The sac was of large size, and appeared to be

formed by a separation of the two layers of the septum ventriculorum from each other throughout their whole extent. The layer belonging to the right side of the heart was exceedingly thinned, and indeed, in one place, the muscular structure was entirely gone, and only the thickened endocardium separated the sac from the ventricular cavity. Projecting into the right auricle was a nipple-shaped prolongation of the sac, with an ulcerated opening at its extremity, by which the blood in the sac communicated with the cavity of the right auricle. In the interior of the aneurysm was a small amount of laminated fibrine, and some fluid blood. The edges of the opening by which it communicated with the aorta were rounded off and smooth. With regard to the other organs, they were all much congested; there was an old crude tubercle in the lungs, and the capsule of the liver was much thickened in patches, presenting the same pearly cartilaginous appearance as did the lining membrane of the heart. There was no further evidence of constitutional syphilis, beyond the fact that there was a well-marked chain of enlarged glands in the groin, and the cicatrix of a bubo. There had been an old-standing disease of the knee, the joint being entirely destroyed, and the bones united by bony anchylosis.

Mr. Thomas P. Pick, *4th of February*, 1868.

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22. *Ulceration and perforation of the aortic valve-flaps; heart and kidneys fatty; liver diseased; ascites; enlarged spleen; final illness setting in with shivering, and rapidly proving fatal.*

Fred. R., aged 39, a fishmonger, was admitted into the hospital on the 29th of January, 1868, with extensive ascites and some abdominal tenderness. He had been ill seven months, his illness beginning with pain in the left flank and diarrhœa, unaccompanied by vomiting. The abdomen began to swell one month before admission, at which time there was no yellowness or other discolouration of the skin and apparently no emaciation. The conjunctivæ of the eyes were, however, slightly yellow. Dulness on percussion was found extending downwards from the ribs on the left side to the pelvis, not altering with position and evidently not due to peritoneal fluid. There was no albumen in the urine, and the pulse was quiet and natural. In the evening of the 30th, he began to have some feverish symptoms, his pulse rose to 132 per minute, respiration to 32, and the temperature of

the skin to 102°·2. On the 31st, he had a shivering fit and a very quick pulse, but nothing wrong was found on examining the heart and lungs, and on the morning of the 1st the House-Physician was called up, and found him nearly comatose; there was much dyspnœa, and the comatose state continued, the pupils being very small, and the pulse quick and hard. A systolic bruit was observed at the base of the heart, and he sank and died at twelve p.m., on the 1st of February.

Post-mortem examination.—The superficial veins of the body were well marked.

Thorax. Old adhesions existed in the right pleural sac, and both the lungs were gorged with fluid and very œdematous. The heart was very large, soft, flabby, and dilated, and its structure fatty. It was quite uncontracted and contained fluid, and there were a number of ecchymoses of blood underneath the endocardium in many places. The valves were blood-stained, and on the surface of the aortic semi-lunar valve-flaps was a large quantity of soft, recently deposited fibrine, the deposit on one of the flaps being of the size of a small bean. Moreover, in the case of one of these aortic valve-flaps, the fibrinous adherent mass was connected with a patch of ulceration of the structure of the valve, which was perforated by the ulcerative process.

Abdomen. There was a large amount of fluid in the general peritoneal cavity. The liver was congested and full of black blood; it was also hard and cirrhosed, and its capsule was thickened and fatty. The spleen was very large, and weighed three pounds and a half, and there was a small, old, firm, fibrinous block on its surface. Both kidneys were very large, pale, fatty, and slightly ecchymosed on their surfaces.*

Dr. John W. Ogle, 18*th of February*, 1868.

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23. *Displacement of the heart to the right side, consequent upon disease in the right lung.*

C. A., aged 18 years, employed as a cattle-drover, was admitted an out-patient at the Middlesex Hospital, under my care, several weeks ago, for a recent attack of bronchitis. The patient was unable to give any history of his case beyond the fact that he had been subject to cough from childhood, but could not recollect that he had ever been laid up by illness. On his chest being exposed for examination, the

* See Hospital Post-mortem Book, 1867, fol. 35.

heart was seen beating below the right nipple. The right shoulder was depressed, the right scapula prominent, and the spinal column somewhat curved towards the right. Both sides of the chest anteriorly below the fifth rib, were flat and retreating. In the centre, the chest was prominent, the sternal ends of the ribs, on either side, projecting in such a manner that the sternum formed, as it were, a shallow groove in the middle. Notwithstanding these deformities, the circumference of the thorax, from the spine to the middle of the sternum, taken in a line with the nipple, was equal on both sides. The resonance on percussion over the left side of the thorax was perfectly clear from apex to base, both anteriorly and posteriorly. Anteriorly the clear note extended over the usual site of the heart and quite across the sternum to its right border. Over the right side of the thorax, percussion elicited a perfectly dull note from the spine of the scapula downwards posteriorly, and from the fourth rib downwards anteriorly; above the fourth rib anteriorly there was also marked deficiency of percussion-resonance, but not absolute dulness. In the right axillary region the percussion-resonance was remarkably clear from the upper border of of the sixth rib upwards. The respiration in the left lung was loud and puerile throughout; it was audible over the proper cardiac region, and almost to the right border of the sternum. In the right lung the respiration was harsh, the expiration much prolonged, and both inspiration and expiration were attended by loud creaking rhonchus. Over the middle of the right scapula there was well-marked pectoriloquy, and greatly exaggerated vocal vibration; pectoriloquy, cavernous respiration, and large crepitation, with a somewhat metallic tone were also audible in the right axillary region.

The heart was beating visibly in the fourth right costal interspace, and more faintly in the third; its impulse was clearly felt over an area three inches in horizontal diameter and three inches and a half in vertical diameter, of which the right nipple formed the central point, but it was most distinct in the fourth interspace immediately below, and slightly outside, the nipple. The cardiac dulness occupied about the same area as the impulse. The heart-sounds were quite normal, but were loudest between the right border of the sternum and the right nipple.

The liver was depressed, its free border being distinctly felt about an inch below the margin of the ribs.

Remarks.—There seems no doubt that the remarkable and very rare

degree of displacement of the heart in this case was due to disease of the right lung. The liver was on the right side, a circumstance which appears entirely to exclude the supposition that the case might be one of congenital transposition of the viscera. In all probability the boy had suffered in early life from pleurisy, or from pleuro-pneumonia with effusion of fluid into the pleural cavity, and the displacement of the heart had been a slow process, consequent upon absorption of the effused fluid and contraction of the right lung without corresponding retraction of the right wall of the thorax. Dr. Stokes describes the only perfectly analogous case with the records of which I am acquainted. The patient died after an illness of a few weeks, and on *post-mortem* examination the right lung was found to be greatly reduced in size, the right pleural cavity was obliterated, and "the heart lay to the right of the sternum in a transverse direction, its base corresponding to the fourth and fifth ribs; it was perfectly healthy; the left lung was much enlarged, and stretched far across the median line; no lesion of structure could be detected." The higher position of the heart in my patient, compared with that in Dr. Stokes's case, would seem to show that, after being drawn across into the right side of the thorax, the heart had also been drawn upwards by contraction of the lung in that direction. I am inclined to think that the whole process had been much slower in the case of my patient than in the patient whose case was related by Dr. Stokes.

The patient was exhibited to the Society.

Dr. Greenhow, 18*th of February*, 1868.

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24. *Endocarditis, leading to partial destruction of two of the aortic valves, and perforation of the base of the mitral valve.*

B. D., a married woman, aged 24, was admitted into St. Thomas's Hospital, on the 27th of January, 1868. She ascribed her illness to having taken cold from working in an open wash-house, but stated that she had been out of health for some time before the commencement of her present attack. Her illness commenced with shivering and pain at the lower part of the sternum and back, followed by cough, expectoration and feverishness.

When admitted, she had been seriously ill for nine days. She was then much prostrated, had a thickly coated and somewhat dry tongue, and a hot skin, and pain in the left side. The respiration was hurried,

and the pulse quick and very feeble. On auscultation there was wheezing in all parts of the chest; and, at the lower part of the left side and back, the resonance on percussion was impaired, and there was bronchial respiration, with decided pleural friction. On the 3rd of February the symptoms were somewhat relieved, and on the 6th the amendment was more marked, the pulse was quieter, the pain in the side was less, and the breathing and expectoration were freer. On the 10th, however, she was found much worse; the dyspnœa was very urgent, the pulse extremely rapid and feeble, and she complained of palpitation. At that time nothing irregular in the sounds of the heart could be detected; but, three days after, the pulse, though very feeble, was remarked to have a thrill more or less of the regurgitant character; and the sounds of the heart were rough and noisy, and, as heard at the base, both the first and second sounds were somewhat prolonged; at the apex, the systolic sound was also slightly prolonged. She died on the 17th of February. The urine was at no time albuminous.

The *post-mortem* examination was made by Dr. Lees on the following day. The brain did not present any appearance of recent disease. The larynx and trachea were healthy; the bronchial mucous membrane was congested, and the tubes were filled with muco-purulent secretion. The right lung was attached by old adhesions at the apex, but, except being œdematous and containing an old cretaceous mass, was free from disease. At the lower part of the upper lobe of the left lung there was a large irregular-shaped cavity, lined by a tough fibrous membrane and surrounded by condensed tissue. The branches of the pulmonary artery adjacent to the cavity were filled with firm fibrinous coagula. In the lower lobe of the same lung there was recent pneumonic condensation, and the layers of pleura were attached by somewhat firm adhesions. The margins of the lung were œdematous; no recent tubercle was detected in either lung. The pericardium contained two ounces of turbid serum, and there were patches of tolerably firm lymph on the auricular appendages. The heart was flaccid, and the muscular substance of a yellowish colour. Two of the aortic valves were partially destroyed, and their surfaces were studded with pinkish yellow-coloured fibrinous concretions. At the base of the free fold of the mitral valve there was a small ulcerated opening, which was lined with fibrine, and opened into the cavity of the left auricle. The heart weighed thirteen ounces. The liver was somewhat fatty; the spleen rather large, weighing seven ounces and a quarter. It contained

a yellow fibrinous mass, which had softened in the centre into a pus-like fluid. A small fibrinous deposit was also contained in one of the kidneys, but, with that exception, those organs were healthy.

The specimen afforded an example of the mode in which Rokitansky's so-called acute aneurysm of the left ventricle is produced. It is comparatively common for the undefended space at the base of the left ventricle to be perforated in connection with endocarditis of the aortic valves, so as to form a communication between the cavity of the left ventricle and the right auricle, ventricle, or auriculo-ventricular opening. Ulcerative perforations into the cavity of the left auricle are, however, of very rare occurrence.

Dr. Peacock, *3rd of March*, 1868.

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25. *Very great contraction of the aortic orifice from disease of the valves.*

W. J. M., aged 23, engaged at a steam saw-mill, was admitted as an out-patient of the Victoria Park Hospital, on the 26th of February, 1868, labouring under symptoms of cardiac disease. He stated that when twelve years old, he fell into the hold of a ship, and was insensible for five or six hours after the accident, and that he cut his head. He was laid by for three weeks, and then entirely recovered. Two years before his death he had another fall and very narrowly escaped coming in contact with the steam-saws, and this, though he was not injured, much alarmed him. Up to the middle of the summer of 1867, he was in good health; and he then, without any obvious cause, began to suffer from palpitation and shortness of breath, and on applying to be admitted as a member of the "Foresters," was declined, on the ground of having "something wrong with his heart." He was not, however, prevented from regularly continuing his work, and on Christmas-day he got married. Two or three days after he was suddenly taken one evening with a severe fit of coughing, and that was followed by profuse spitting or vomiting of blood, and he was away from work about a week. After that, however, he continued to follow his employment regularly till six days before his death, when his difficulty of breathing became great; he had pain at the sternum and lower part of the abdomen, was troubled with sickness and vomiting, became greatly exhausted, and could not sleep at night. The day before his death his feet began to swell. He came to the Victoria Park Hospital on the 26th of February, and was then very faint and pale; a loud double murmur was heard at the base, and he was evidently labour-

ing under obstructive and regurgitant disease of the aortic valves, but as it was not decided to treat him in the hospital, he was not fully examined. He returned home, having ridden both ways in a cab, and after his arrival he seemed as well as he had been for the last few days. In the evening he went out to the water-closet, and was found dead shortly after, having fallen off the seat, and having died apparently instantly. His mother was a healthy woman, 43 years of age, but his father had died suddenly at about the age of 40. His brothers and sisters, six in number, were living, and except a sister who was said to have some affection of the heart, were healthy. He had never had rheumatism or any other serious disease; and his friends were not able to assign any cause for his illness, unless that in his occupation he had to press with his chest against the pieces of timber that were being sawn.

The body was examined the day after death by Mr. Power, the resident medical officer of the Victoria Park Hospital. It was found to be stout and well nourished. The pleural cavities each contained a considerable quantity of serum; the pericardium also contained fluid, and some was found in the peritoneal sac. The lungs were œdematous; the liver, spleen, and kidneys were congested, but not otherwise diseased. The heart was of very large size, and had the peculiar pointed form met with in cases of aortic valvular disease; it weighed twenty-four ounces, avoirdupois. All the cavities were enlarged, and their walls, especially those of the ventricles, increased in thickness; the hypertrophy and dilatation being very great in the left ventricle. The aortic valves were very greatly diseased, being blended together, and protruded forwards into the vessel, so as to make a funnel-shaped aperture, so small as only to admit the passage of the point of the little finger. Not only were the valves adherent, but they were also greatly thickened and indurated, being studded with cretaceous deposits, some of which were uncovered by endocardium, so as to be exposed to the current of blood. The valves scarcely admitted of any motion, and by their imperfect adjustment a somewhat triangular-shaped aperture was left, through which a column of water flowed slowly. The ascending aorta and sinuses of Valsalva were somewhat large for the age of the subject, but were not otherwise diseased; the mitral valves and the lining membrane of the left ventricle were somewhat opaque and thick.

The dimensions of the organ were as follows:—

			English
Girth externally of right ventricle -	66 Paris lines	= 148.5 m.m.	or 5.86 inches.
,, ,, left ,, -	66 ,,	= 145.5 ,,	= 5.86 ,,
Thickness of walls of right vent. base	2 ,,	= 4.5 ,,	= .177 ,,

				English
Thickness of walls of right vent. midpoint	2½	Paris lines =	5.6 m.m. or	.22 inches.
„ „ „ apex	2	„ =	4.5 „ =	.17 „
„ „ left vent. base	6	„ =	13.5 „ =	.53 „
„ „ midpoint	8	„ =	18. „ =	.71 „
„ „ „ apex	5	„ =	11.25 „ =	.44 „
Length of cavity of right ventricle	54	„ =	121.5 „ =	4.79 „
„ „ left „	54	„ =	121.5 „ =	4.79 „
The aortic orifice admitted ball No.	3 18	„ =	40.5 „ =	1.59 „
Pulmonic „ „ „	12 45	„ =	101.25 „ =	3.99 „
Right auricular ventricular ap. „	15 54	„ =	121.5 „ =	4.79 „
Left „ „ „	17 60	„ =	135. „ =	5.32 „

The case is interesting as showing the existence of very extensive disease, which must certainly have been of very long duration, but which had not manifested itself by any serious symptoms till shortly before the fatal event. The precise duration of the disease can, however, only be a matter of conjecture. From the peculiar blending of the valves together it is probable that it may have been of congenital origin; though it is possible that it may have been aggravated by some injury to the valvular apparatus at the time the patient sustained the severe fall. The more urgent symptoms might have been excited by the alarm which he felt when he fell two years before his death, and narrowly escaped being injured by the saws.

The case also well illustrates the changes which take place in the heart in cases of great obstructive disease at the aortic orifice. The heart was fully two and a half times its proper weight, and all the cavities were dilated and hypertrophied, but the left ventricle was especially enlarged. The great diminution in the capacity of the aortic orifice may be estimated by the fact that it would only give passage to a ball eighteen lines in circumference, which is half the capacity of the natural orifice. The case bears a close resemblance to one described by Dr. Peacock, in the ninth volume of the *Transactions;* but it is even more remarkable than that: for in this instance the obstruction was probably quite as great, and the valves as extensively ossified, in a man at the early age of 23, as in the other case in which the subject of the disease was 40 years of age. The description of the state of the heart in that instance was also somewhat imperfect; as, though it was reported that the organ, more particularly the left ventricle, was hypertrophied, the precise extent of the enlargement as indicated by weight and measurement was not given. There is, however, no doubt that in cases of this kind, in which no serious symptoms are

manifested till very shortly before the death of the patient, though the disease must be of very old date, the immunity from suffering is due to the great increase of power in the heart, and especially the left ventricle, so as to enable it to maintain the circulation.

Dr. Peacock, *3rd of March*, 1868.

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35. *Three specimens of blood-clots within the veins in process of organic union with the vein-walls.*

The first is that of a saphena vein, the cavity of which is in part blocked up by a clot. The portion of the clot which occupies the lower part of the vessel is cylindrical, but so contracted that it does not entirely fill it, and is firmly united to the vein laterally. Above, it is spread out and presents the appearance as though the vein had been thickened; the new deposit being raised above its ordinary level, and fissured into short digital processes, like bands and slender cords in relief on its surface. The union of the clot-tissue to the vein is in parts imperfect, for it can be peeled off; but in others—those in which the tissue is most compact and flattened down on the surface—it is so firmly adherent that it is difficult to find the line of demarcation between them, either by colour or separation.

In the second case, the clot nearly fills the saphena vein; it is adherent to it by a broad base, and has not lost its blood colour in all parts. This also sends off flattened bands and small cords in different directions, some of which are detached from the vein wall, excepting at the extremities, from one side of the vein to the other. At the points of attachment the clot-tissue could not be separated from the vessel free from vein-tissue.

The inner surface of the third specimen—that of the femoral vein—is rugged, and its channel is very much narrowed by clot-tissue, fissured so as very much to resemble the musculi pectinati. The clot extended along the iliac vein for a distance of two inches, where the vein had been compressed by a cancerous tumour. Along the outer side of the venous channel, and attached to it, a cord runs, of the size of a goose-quill. Dr. Reginald Southey ably assisted in the examination of these parts. The cord, on cutting off thin transverse slices, and submitting them in mass as well as in fragments to the microscope, showed all the elements of vein-tissue in normal relation to each other surrounding a small column of coagulum. It appeared to be an obliterated vein—probably the original femoral—to which the present had been a colla-

teral or supplemental vein. In this the clot-tissue had the same appearance as in the others. In the first, as in other instances I have met with, the higher portion of the clot is more advanced in changes towards complete organization than the lower; and the transition from the one to the other, as it is examined in different parts proceeding upwards, not only proves that its more compact portion is but an advanced stage of the recent clot, but discloses the changes that occur in the course of that transition. These appear to consist in the gradual evolution of somewhat coarse, wavy, with some faint indications of yellow elastic, tissue, sparsely intermingled with small bodies resembling blood-débris—the microscopical appearances of the compact and most advanced portions—from the coarse and crossed fibrillæ and blood-corpuscles that constitute recent coagulum; this is a transition from the mere clot to, perhaps, a *low* form of organized tissue, but still so far advanced as to enter into living union with the vein-wall. I could not satisfactorily detect blood-vessels in this tissue, nor evidence of fenestrated membrane, nor epithelium on its surface, but it glistened as though it was in organic combination with that of the adjoining healthy vein.

These specimens appear to show, first, a fact of which I have had, in the course of some investigations which I have been making, abundant collateral evidence, viz., that the blood in veins is exceedingly prone to coagulate, much more so than that in arteries; and secondly, that its tendency to organize and then arrange itself on the walls of the vessel is the provision made for the ultimate restitution of its channel. I have met with no instances of alleged blood-fusion, preliminary to the disappearances of these deposits in the stream in a healthy vein; they do take place in veins so diseased that the walls present no obstacle to its permeation and final admixture with the surrounding texture. From the nature of the venous circulation, the clearance of a vein obstructed by clot is of the greatest importance.

One other form of clot I have met with, of which I had two specimens. These were placed in dilute methylated spirit, and thus, to my surprise, dissolved, with the exception of some brownish residuum—blood-corpuscles—which lay at the bottom of the bottle.

These clots slipped out of the veins that were cut across in the course of dissection, in two different bodies. Their source could not be discovered. They were very regularly formed and spindle-shaped bodies, smooth and glistening on the surface—one an inch, and the other half an inch in length—and consisted of a whitish firm cyst, that enclosed a

central oval cyst of like character. The latter cyst contained very fine, friable, whitish, fibrous tissue; the outer, the same kind of tissue, with masses of yellowish matter, evidently the residuum of serum and some blood-globules arranged around the inner cyst. I can offer no explanation of them, excepting that they appeared like clots that did not organize, but which, through the somewhat curious arrangement of the constituents, had been shut off as it were from the blood-stream.

Mr. John Gay, 17*th of March*, 1868.

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27. *Case of ulcerative endocarditis with abscesses in the brain and spleen.*

These specimens are from the body of a young man who was admitted into Guy's Hospital, under the care of Dr. Wilks. He had the conditions of mitral disease, a systolic bruit at the apex and congested viscera with dropsy. During the time he lay in the hospital he had an attack of right hemiplegia with aphasia, and at that period and subsequently he was in a feverish state.

On examining the body, the heart was found to be somewhat increased in size; its mitral valve was much diseased; many of the chordæ were divided and others covered with granulation-growths which united them in large warty-looking masses; many parts of these warty-looking masses had an eroded appearance. Small nodules were most easily separated from the masses. The brain had its left side flattened from being swollen so as to press upon the cranium. On opening the Sylvian fissure, a plug of substance like that of the granulations on the mitral valve was found impacted in the Sylvian artery, the artery before and behind the plug being quite free from clot; at the spot where this plug lay there was an inflamed patch of brain, in a state of red softening, the pia mater being coated with lymph to the size of a florin over this patch and around the artery; it was to be noted further that another artery which ran through this inflamed spot was not occupied by fibrine. The part inflamed was very close to the third left frontal convolution of M. Broca. Deeper in the brain and continuous with this inflamed part of the surface was an abscess, the pus in which was greenish and semi-tenacious, as pus in the brain always is; under the microscope it was seen to be composed of aggregated crowds of pus-cells. The spleen had its surface covered with recent lymph; this was thickest over certain discoloured patches, which were in various states: some turned out on section to be large abscesses containing

greenish almost glutinous pus, entirely unlike softened fibrine. The arteries corresponding to these patches in the spleen had plugs in them, consisting of the same granulation-like substance as that on the mitral valve. The hepatic artery had similar plugs in many of its branches, and the liver showed nearly everywhere a curious state, having points of viscid pus of about the size of a millet-seed or, in a few instances, of lentils; of these I cut many microscopic sections, to ascertain, if possible, what tissue they began in. I always found the epithelium of the capillary gall-ducts normal up to the little abscess, and in some cases I could distinguish the artery in a natural state; these always came quite up to the abscess, so that it was situated in the portal connective tissue, but its exact starting point I did not further make out. The joints were healthy; there was no sign of pyæmia in the lungs, but the yellowish wedges of cardiac embolism were present in the kidneys.

This case offers several points of importance. First, should it be called pyæmia? I think it should. The pus in the brain, liver, and spleen was fully developed laudable pus. Perhaps it would be well to sharply distinguish those cases of pyæmia in which we can observe the substance, by means of which the suppurating cause is conveyed from place to place. That an excitant of suppuration may be so conveyed and impacted is certain from such cases as the present; but it is equally certain that in other cases the secondary suppurations cannot depend on the mechanical impaction of clots in the arteries of the parts attacked, as in cases of pyæmic suppurations limited to the joints, where the capillaries of the lung are between the primary and secondary sites, although we may suppose the only difference to be that in the latter class of cases the matter conveyed is small enough to pass through the capillaries of the lungs, and thus gets on to the joints or liver; yet to explain the latter class of cases we must further allow some form of affinity guiding the substance to the joints or liver, in preference to other parts; for often many abscesses are present in the joints or liver, and none elsewhere—a distribution that cannot be a mere chance. It is worth noting that the abscesses in this case arose in those parts which are the seats of ordinary embolism from cardiac disease, and not in the parts usually subject to pyæmic suppuration from external wounds; this is, no doubt, due to the origin of the emboli from the left endocardium, as in ordinary embolism, and further proves that the abscesses were due to the same embolism. Such a case as this does not appear to me to show any specific relation of pyæmia to rheumatism. The intensification of the endocardial inflammation to the point of pro-

ducing pus, independently of the cause of the endocarditis, would itself explain the occurrence of suppuration about the plugs which colonize the tissues from the original seat of suppuration, and bring with them the vital action they had in the place of their origin.

Dr. Moxon, 17*th of March*, 1868.

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28. *Atheroma of the aorta and complete occlusion of the left subclavian and left coronary arteries at their origin.*

Mr. L., a plumber, aged 56, of small build and spare habit, had been under the care of Dr. John Watson for some years, and had for the last four years before his death complained of obscure pains and a feeling of oppression at the præcordia on making the least exertion. Three years ago, it was observed by Dr. J. Watson, that the pulse on one side was much smaller than on the other, and that there was a systolic bruit at the base of the heart, and a very tumultuous and irregular action of the same organ. During the last few months of his life, the sense of oppression and pain at the chest increased very much, and became more easily excited by the least exertion, so that latterly he was obliged when walking to stop at every three or four yards, fearing that if he continued to move he should fall down. On one occasion, he was three hours walking a distance of only half a mile. He had, besides these symptoms, occasionally suffered from pain down the left arm. On the 14th of March, his brother having died a few days before, he was seized while dressing in the morning with an unusually severe pain in the præcordia; he rang for assistance, but fell back into a fainting fit, from which he could not be roused, and died within twenty minutes of the seizure commencing.

On the 15th of March, a *post-mortem* examination was made, the thorax only being opened. The left lung was adherent by its pleural surface from old pleuritic effusion, and the heart was found in the condition seen in the preparation: the surface was much covered by fat; the left ventricle was thickened and hypertrophied; all the valves were thickened, and the semi-lunar valves surrounded by a dense cartilaginous material which extended some distance into their attached margins. The lining membrane of the aorta was ulcerated in irregular patches, the edges of these ulcers being for the most part ragged and undermining the inner coats, and in one or two places bristles could be passed beneath the lining membrance from the opening of one ulcer to that of another.

Opaque patches of yellow atheromatous material were scattered over the inner surface of the artery, and were particularly abundant about the region of the left carotid and left subclavian arteries. The passage of the latter artery was found to be completely closed, though its canal was pervious up to the point of its origin from the aorta, where it terminated in a conical blind pouch. The left common carotid, though narrowed by the encroachment of atheromatous material, was not closed. On searching for the coronary arteries, the only opening corresponding to the origin of the right coronary was of the size of a pin-hole, and no opening whatever could be found in connection with the left coronary. Nevertheless both arteries, when dissected out from the fat surrounding the base of the heart, had the normal appearance and calibre; and the left, though not communicating with the aorta (excepting by its anastomosis with the right), was pervious quite up to its point of origin, there suddenly ending in a blind pouch. The muscular tissue of the heart was of good colour and firm consistence, and to the naked eye showed no signs of fatty degeneration.

Mr. W. Spencer Watson, *7th of April*, 1868.

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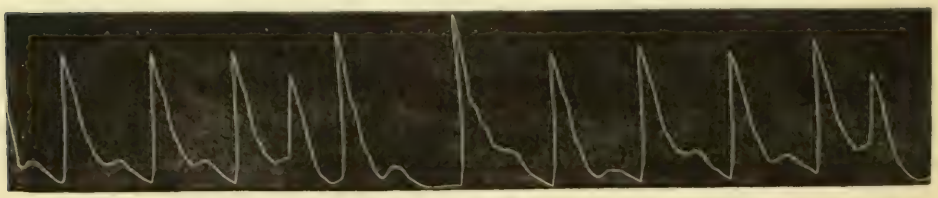
29. *Disease of aortic valves, giving rise to copious regurgitation.*

T. B., aged 27, formerly seaman, subsequently bricklayers' labourer, became gradually affected, in 1862, with slight dyspnœa, palpitation, and præcordial pain, on account of which symptoms he was, a few months after, invalided from the Navy. His previous health had been uninterrupted; he had never had acute rheumatism nor any other serious ailment. After leaving the Navy he was moderately well till April, 1867, when his former symptoms returned, in consequence of which he became, three months afterwards, an out-patient of Brompton Hospital, under the care of Dr. Douglas Powell, his principal complaints being præcordial distress and palpitation. He remained under treatment for several months, during which period the thoracic physical signs underwent no important change, although his general condition was materially improved. On the 28th of December he was admitted into the hospital, under my care, when the following facts were observed:—The præcordial dulness extended transversely from the right sternal margin to one inch beyond the mammary line, and from the upper margin of the fifth cartilage downwards. A loud diastolic murmur, commencing from a sharp second sound, was heard all over

the chest, the point of maximum intensity being between the third and fourth cartilages, near the sternal margin. The same sound was heard very distinctly over the seventh rib, two inches to the left of the mammary line, but it was not heard at the apex. The first sound, as heard at the seat of impulse, was grave and prolonged. The systolic shock was felt in the sixth space to the left of the mammary line. During the period corresponding to the diastolic bruit, the wall of the chest, in the fifth space, between the sternal edge and the nipple, obviously expanded, the expansion being accompanied by a very sensible vibration or thrill, the abrupt commencement of which was synchronous with the second sound. At this time the patient was not suffering from any urgent symptoms, but, about the 8th of February, he became somewhat suddenly worse. Fine moist râles were heard at the posterior bases, and he began to expectorate blood-stained tenacious sputa. The signs of pulmonary hyperæmia rapidly increased, while the breathing became rapid and difficult, the skin jaundiced, and the urine albuminous. He died on the 12th. During the progress of the case, numerous sphygmographic observations of the pulse were made, the results of which illustrate in a remarkable manner the changes frequently observed in the course of a case of aortic regurgitation. Fig. 8 exhibits the pulse at the time the patient

Woodcut 8.



Woodcut 9.

Woodcut 10.

was suffering from violent palpitation and irregularity of the heart's action; it was taken in July, 1867. Fig. 9 shows the pulse four

months afterwards, when his condition was much improved. Fig 10 exhibits the pulse during the last stage of the disease. It has assumed a character which is not only not that of aortic regurgitation, but in some respect opposite to it; for the systolic expansion of the artery, instead of being sudden and violent, is much slower and more gradual than in health, while, on the other hand, the arterial resistance is so much diminished, that, in order to obtain results, it was necessary to weaken the spring of the sphygmograph to the utmost.

Post-mortem examination, twenty hours after death.—The surface of pericardium exposed on removing the sternum and costal cartilages was of unusual extent, and of somewhat triangular form, the apex of the triangle being at the second left cartilage, while the base extended horizontally from the right sternal margin an inch and a half to the left of the mammary line. The greatest transverse measurement was six inches and a half. The pericardium was free from adhesions, and contained very little fluid. The left ventricle having been opened and emptied of the dark soft coagula it contained, water was poured into the aorta, by a funnel, and was found to pass in full stream through the ventricle. The right ventricle and both auricles were dilated, and the left ventricle much hypertrophied. The aortic valve was smooth and perfectly free from vegetations, and at first sight looked as if it was healthy; but on pouring water over it (the aorta having been previously split open), it was found that the free margins of two of the curtains, namely, the posterior and that adjacent to the mitral valve, did not expand so as to retain the liquid in a natural manner, but folded or rolled over towards the ventricle. This was found, on more careful examination, to be due to the fact that the edges of the two curtains were blended together for three-sixteenths of an inch from the point from which they naturally spring, so as to form a ridge which led vertically upwards, terminating in a prominent induration. The position of this nodule was such that a straight line uniting the opposite extremities of the affected curtains would have passed through it. As a result of this condition, the margins of the diseased valves were considerably below the openings of the coronary arteries. The lower lobe of the left lung was much congested, and contained several patches of pulmonary apoplexy. The liver was indurated, and exhibited intense hepatic vein congestion. The other abdominal organs presented corresponding appearances.

Dr. Burdon Sanderson, 21*st of April*, 1868.

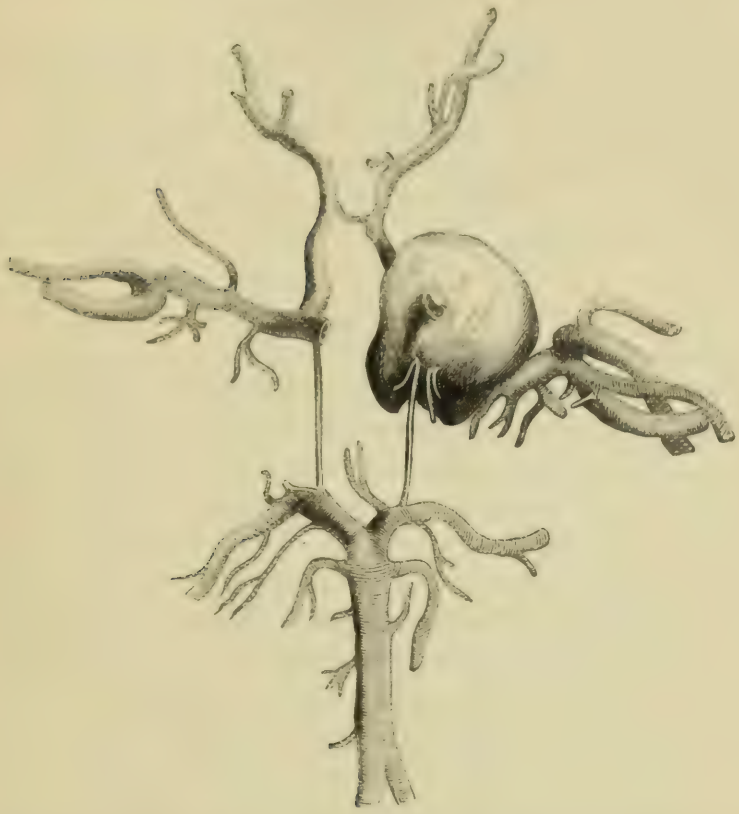
30. *Aneurysm of extra-cranial portion of the left internal carotid artery.*

C. R., a single woman, aged 27, was admitted into St. Thomas's Hospital on the 16th of December, 1867. After previous good health, she was attacked suddenly on the 6th (ten days before admission) with a fit. She remained insensible until the next morning, and is said to have spoken then, but not since. Her right side on admission was paralysed, the arm and leg being motionless and rigid, and the angle of the mouth drawn to the left. Sensibility seemed impaired partially only; intelligence was imperfect; she was unable to speak, passed everything under her, appeared to be deaf, and the right cornea was insensitive to touch. Pupils equal; face flushed; pulse 76. During the next ten days she improved much as to her intelligence, but still remained paralysed, and passed her motions under her. She was able at the end of this time to utter a word or two imperfectly, but for the most part she seemed incapable of either using appropriate words or articulating them. During the ten days following there was still further improvement in some respects; her deafness totally disappeared, and her intelligence appeared to have become entirely restored, but her paralysis remained much as it had been; her evacuations were still passed in the bed, and her speech underwent little or no improvement. Henceforward there was little real change in her condition; her speech on the whole improved, still her defect of articulation and inability to select appropriate words were remarkable. On the 1st of February she was suddenly attacked with a severe convulsive fit; a succession of fits followed, and she died the next day.

Post-mortem examination.—On removing the dura mater, about an ounce of dark-coloured coagulated blood was found extravasated into the cavity of the arachnoid, the largest amount of blood occupying the middle fossa. In the subarachnoid tissue of the same region, there was also a good deal of effused blood, and blood in smaller quantities extended thence into the subarachnoid tissue of other parts of the under surface of the brain. At the point of bifurcation of the left internal carotid artery into the anterior and middle cerebral arteries, there was an aneurysm of flattened spherical form, measuring about three-quarters of an inch from side to side and from before backwards and presenting at its posterior part two projections, each about the size of a cherry-stone, the one directed backwards, the other backwards and inwards. (Fig. 11.) The internal carotid artery terminated by opening directly into the aneurysm; the posterior communicating artery springing from

the aneurysm at a short distance behind it, the anterior cerebral springing from the anterior and inner part of the aneurysm, and the middle cerebral from its outer and back part. Most of the larger arteries at the base were somewhat thickened; but the left middle cerebral and

Woodcut 11.



View from below of the aneurysm of the left internal carotid artery.

its branches were much dilated, had considerably thickened walls, and retained the cylindrical form. There was similar dilatation and thickening of the large branches of the right middle cerebral artery. No rupture was detected in the aneurysm, or in any large vessel. The portion of brain in relation with the aneurysm was deeply indented by it. The left optic nerve also was displaced and flattened by it, and the roots of the olfactory nerve were obliterated. The lateral and third cerebral ventricles were filled with coagula, and the posterior and lower part of the left anterior cerebral lobe, the left corpus striatum, optic thalamus, and Island of Reil were softened and blood-stained

The rest of the brain was healthy. There was some little atheromatous deposit in the aorta, but generally the abdominal and thoracic viscera were healthy. Dr. J. S. Bristowe, *21st of April*, 1868.

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31. *Case of pyæmia and acute endocarditis, with deposit on the tricuspid valve.*

J. B., a carpenter, aged 48 years, was admitted into the Middlesex Hospital, on the 31st of March, 1868, under the care of Mr. Shaw, for a fluctuating swelling, with pain, in the joint of the left knee. The swelling was incised, and pus evacuated. On the 25th of April, Mr. Shaw requested me to see the patient on account of pain in the right knee, and in both elbows and wrists. These joints were not sensibly swollen, but they presented a red blush externally, and were exquisitely tender, either on pressure or movement. The left knee and thigh were much swollen; they had a red brawny appearance, and pitted on pressure. The leg and ankle were also œdematous. A gaping wound, from which there was a discharge of unhealthy-looking pus, extended about two inches in length from the lower margin of the patella downwards. Four days before I saw the patient he had had several severe attacks of rigors, followed by slighter ones on two subsequent days. I found that his pulse exceeded 150; his temperature was 104°, and he was slightly incoherent; he was perspiring profusely. Pleuritic friction was heard over a limited space underneath the left scapula, and crepitation in the base of both lungs. The heart-sounds were perfectly normal. On the following day the patient was drowsy, but was easily aroused for a few moments at a time. The conjunctivæ were injected, the eyes looked dull, and he complained of dimness of vision. His temperature, which had been taken at intervals of four hours, had varied from 102° to nearly 105° Fahrenheit, and he had been delirious during the night. He died early on the morning of the 27th of April.

Post-mortem examination.—Both knee-joints contained pus. The left femoral vein was occluded by a clot which extended as far as the common iliac vein. The lungs were intensely congested, and presented throughout many scattered patches of lobular pneumonia. There was no trace of pericarditis. The right auricle was of healthy appearance, and filled with loose clot. The anterior flap of the tricuspid valve was irregularly thickened, and presented to the naked eye the appearance of a deposit of pus, or of soft exudation. The rest of the valve was also thickened, and of a bright red colour. The mitral valve was

red and thickened, and presented, near the free edge of one of its flaps, a trace of yellow deposit resembling that seen on the tricuspid valve; its chordæ tendineæ were likewise red and swollen. The aortic valves were of a bright rose-colour; their ventricular surfaces were opaque, and presented, in places, an excoriated appearance, as if the endocardium was peeled off; at these places the valves had a remarkably thin appearance. The muscular substance of the ventricles, although healthy-looking to the naked eye, was seen under the microscope to be markedly granular, with here and there small collections of oil-globules. The aorta, to a distance of about four or five inches from its commencement, was of a vivid pink hue, and presented a few streaks of atheroma in a line with the mouths of the coronary arteries.

Dr. Greenhow, *5th of May*, 1868.

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32. *Aneurysm of the abdominal aorta above and involving the cæliac axis.*

H. B., aged 36, a porter in a leather-warehouse, was admitted into the Great Northern Hospital, under my care, in December, 1867, having been sent to me by my colleague, Mr. Buxton Shillitoe. He was a short, slightly built, but well-nourished man, with anxious countenance, and he complained of constant, at times very severe, pain in the abdomen, back, and legs, which incapacitated him from work and prevented his lying down. He suffered also from throbbing and beating in the epigastric region and from sickness now and then, and he had lost flesh and strength. He had always been temperate and steady, and had enjoyed good health, till in the spring and summer of 1867, when he not unfrequently suffered much from pain and oppression after food, and from flatulence. Some time in the summer he fell from a ladder on to the edge of a pail, hurting his side (believed to have been the left side), and he complained of pain there for some days. Just as he was recovering from that fall, he, in coming downstairs, trod on a cat and fell for some distance, but was not hurt so as to be kept from his work. Some time after this he was suddenly seized one Sunday, while waiting for his dinner, with intense pain in and round the upper part of the abdomen, and with great faintness, and from that time he had never been quite free from pain. He had gradually got worse, the pain becoming more severe, and affecting more the back and the legs, and gradually he had become quite unable to work. The countenance was distressed and anxious; the appetite was fairly good, but he was afraid

to eat on account of the severe pain generally following a solid meal. The tongue was clean, the bowels costive, and he suffered from piles. The pulse was about 74, of moderate volume, and equal in both wrists. The pupils were equal; he had no arcus senilis. The heart and lungs were healthy. A round, smooth, pulsating swelling was visible in the left hypochondrium, extending upwards under the left false ribs; the impulse was very strong and forcible, compared with the beat of the heart, with which it was perfectly synchronous; over it a loud whir was audible, synchronous with the heart's systole; it was dull on percussion and immoveable. No whir or bruit could be heard behind. He was unable to lie down, the recumbent posture always bringing on severe pain. He complained of weakness of the legs, and had lost flesh there more than on the trunk and upper extremities. The nature of the malady admitted of no doubt, and there seemed to be very little chance of any benefit from treatment. Pressure on the aorta above the aneurysm was impossible: and it seemed useless to attempt distal pressure, for it did not appear possible to apply it so close to the swelling as to arrest the circulation in all the aortic branches below it. Perfect rest in the recumbent posture was also forbidden by the severe pain which generally came on on lying down for any length of time. Quiet in the hospital, conium, bromide of potassium, morphia, and careful diet produced some alleviation. The acetate of lead was tried, but had to be very soon abandoned on account of increase of pain and flatulence. The tincture of green hellebore was then given, in the hope of "slowing" and weakening the circulation. It was gradually carried up to ten minim doses three times a day, and was taken for a month. When begun, the pulse was 72, small, quick, and regular; the impulse over the tumour was forcible, the whir loud, and the patient complained much of pain in the left shoulder. The pulse was brought down to 64, the impulse over the tumour became weaker, and the pain in the shoulder much less: still the patient could not lie down without increase of pain, and required morphia every night to enable him to sleep. Now and then, too, he became faint and sick, and the medicine had to be omitted for a day. On the 9th of April he suffered so much from sickness after each dose of it, that it was stopped, and the acetate of lead again given. On the 12th of that month he suddenly died, at eight p.m.

On examination of the body, the thoracic viscera were found to be healthy. On laying open the abdomen, the stomach and intestines were observed to be greatly distended by gas, and no blood was visible. The

liver, which otherwise appeared to be healthy, was adherent to the diaphragm over almost its entire upper surface. Considerable difficulty was experienced in the removal of the stomach and intestines, which appeared to be tied together, and to be forced down in the upper half of the left side of the abdominal cavity, where a very large quantity of blood was effused, apparently under and among the folds of the lesser curvature and the mesentery; and in forcibly removing the stomach and intestines the sac of the aneurysm was torn open. The spleen appeared to be healthy. There was no blood effused to the right of the vertebral column. The kidneys were healthy. The aneurysmal sac was immediately under the diaphragm, and so strongly adherent that a portion of the diaphragm had to be cut away with it. It was rounded in shape, about three inches in diameter, and contained some clots and layers of fibrine. The sac communicated with the artery by a vertical opening about one inch long, with rounded, smooth edges, apparently formed by the lining membrane of the artery. It was not clear whether the sac actually was formed in the cæliac axis, or whether this was only involved in its coats. The descending aorta was studded throughout its length with spots of atheromatous deposit. The position of the sac, in a part so richly supplied with nerves of the sympathetic system, accounts for the severe and constant pain. Dr. Wm. Cholmely, *5th of May*, 1868.

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33. *Aneurysm of the descending thoracic aorta, compressing the left lung, and finally bursting into the right pleural cavity.*

F. R., aged 31, first applied, many months ago, among my out-patients, at the Great Northern Hospital, complaining of debility, breathlessness, and pain in the chest. He had an extremely feeble, small pulse. The præcordial dulness was much extended, and a pulsation, supposed to be that of the heart, was visible across the left side of the chest. But he did not attend more than once or twice, and was lost sight of till he again presented himself in December last. He was then suffering from all his former symptoms in an exaggerated degree, and was admitted as an in-patient. He was a well-built, thin, but not emaciated man, a bricklayer by trade, and had been out in the Crimea during the whole period of the war there. While on board, on his return, he had a severe fall, and had been saved from being precipitated down the hold of the vessel only by coming with the lower part of his chest across a bar of wood. About two years

ago he had begun to complain of pain in his chest and back, and for the last nineteen months he had been almost entirely unable to do any work. One year before that he had had a serious fall from a scaffold, for the effects of which he attended at the Gray's Inn Lane Hospital. He had been a hard drinker of spirits for four years, and had had syphilis. He had a rather distressed look, but had florid, red lips; equal, rather dilated, pupils; and no headache. The appetite was good, but he suffered constantly from sickness; nearly all food caused pain in the chest; solids seemed to stop, or at least to meet with some obstacle, about the middle of the chest, and were generally rejected soon after being taken. He had attacks of severe pain round the lower part of the chest and upper part of the abdomen, and could then only obtain relief by turning over to the left side till he lay nearly on the chest, or by placing himself on his elbows and knees. The respirations were 20 per minute, when he was lying quiet, but the slightest exertion brought on dyspnœa; no abnormal sounds were heard in either lung, but he had often a loud cough, with some mucous expectoration. The voice was feeble, but otherwise natural. The pulse was 120, very small, feeble, and quick; it was equal in both wrists. The præcordial dulness extended from a little to the left of the nipple-line to the middle of the sternum; the heart's impulse could be seen and felt in the nipple-line, and a similar and exactly synchronous impulse was seen extending to the scrobiculus cordis. Percussion and the pressure of the stethoscope over this region caused great pain, and there was much tenderness over the stomach. No bruit was anywhere heard. With rest, very careful dieting, ten-grain doses of iodide of potassium three times a day, and a grain of opium night and morning, he obtained considerable relief; was able to be up in the ward all day, slept well, was free from pain and sickness, and gradually left off the opiate; but he could never take solid food. The breathlessness remained the same, and the physical signs altered only in this, that the dulness gradually increased in extent. Early in February, 1868, it was noted that there was dulness over the base of the left lung, and that this dulness extended round the left side. On the 14th of March the præcordial dulness extended over an area five inches wide by four inches deep, and a systolic impulse was visible over the same extent; there was dulness round the left side nearly into the axilla, and behind, from the spine of the scapula downwards; at the apex of the left lung the respiratory murmur was faint and rather bronchial. Under the extreme edge of

the right false ribs, near the ensiform cartilage, a loud systolic whir was audible, but nowhere else, in front or behind. The lips were florid, the pupils dilated and equal, the pulse 120, very feeble and low, like the pulse of regurgitation. Through March he suffered again much from pain and sickness, and gained more relief from bromide of potassium and opium than from anything else. On the 9th of April he was suffering severely from pain round the epigastric region, and that night he got out of bed to shut a window in the ward, went back to his bed, and suddenly died.

The body was examined on the 11th of April, by my colleague, Dr. Crucknell, who kindly supplied me with an account of the *post-mortem* appearances. On removing the sternum, the right pleura was found nearly filled with coagula and serum; the blood-clots weighed nearly five pounds avoirdupois. The heart was small, its surface overlaid with fat, and it lay in a lax and baggy pericardium. The endocardium and the valves were healthy. The whole of the aortic arch from its root was considerably dilated, and the internal coat atheromatous. The great vessels springing from the arch were healthy. About two inches beyond the point where the left subclavian is given off, and where the aorta comes into relation with the third dorsal vertebra, was a large, elongated, flask-shaped aneurysmal sac. Its length corresponded with six of the dorsal vertebræ, viz., the third to the eighth, both inclusive, the bodies of which closed up the sac posteriorly and were deeply eroded, the intervertebral cartilages being comparatively unchanged. It encroached much more on the left than on the right side of the chest, and especially so much in its lower portion that the lower lobe of the left lung was completely collapsed from pressure between the sac and the pericardium; but there was also a deep fissure-like pouch on the right side of the vertebræ, at the upper part of the sac. Its wall was thick and leathery, containing no osseous or calcareous plates; its lining very uneven, corrugated, and in parts cracked, and partially detached. It contained a massive pale clot, but no laminated fibrine. The exact point of rupture was not ascertained. Both lungs were firmly adherent by their lower lobes to the exterior of the sac. They were adherent also at the apices and elsewhere to the walls of the chest. A small cheesy mass was found in the left apex, and a calcareous nodule, larger than a pea, in the left lower lobe. There was also calcareous induration of one of the bronchial glands. The liver was of the "nutmeg" kind. The kidneys, both to the naked eye, and examined under the microscope, were perfectly healthy.

It is evident that the aneurysmal sac, when distended with blood, came forward all round the heart, imbedding it as it were, so that the cardiac dulness and impulse were inseparable from the dulness and impulse of the aneurysm. One day, early in February, a systolic whir was audible just below the ensiform cartilage, but it had disappeared the next day, and could not again be found till in March, as before stated, it became audible rather more to the right. A faint systolic murmur was at times heard at the apex of the heart, probably caused by the pressure of the sac. No bruit was at any time heard behind.

Dr. Wm. Cholmeley, *5th of May*, 1868.

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34. *Aneurysm of the abdominal aorta. Ligature of the superficial femoral artery.*

The man from whom this specimen was taken was an iron-turner by trade, and 30 years of age. Eighteen months ago he first noticed a pulsation below the umbilicus and to the left side, but he did not notice any swelling until six months afterwards; for the last year it has been increasing gradually, and very rapidly during the last five weeks. On admission there was a large pulsating tumour on the left side of the abdomen, extending from the border of the lower rib on the left side to the line of Poupart's ligament, and from two inches on the right side of the linea alba, round to the spine; elsewhere, the abdomen was tympanitic, but over the tumour there was absolute dulness. The pulsations were lateral as well as vertical. The tumour was hard, but not painful, although at times he had pain in the dorsal region. The left leg was much swollen, and had been so for about four months; the glands above Poupart's ligament were large and tender. The man was thin and sallow, and was losing flesh rapidly. He was admitted into King's College Hospital, under Sir W. Fergusson, on the 28th of January, 1868. On the 11th of February, the left leg was more swollen; the tumour had increased in size and extended below Poupart's ligament. Half a grain of morphia was injected at various times to relieve the pain in the back. On the 11th of March, the tumour was larger, and had reached three inches below Poupart's ligament, and the other symptoms were aggravated. On the 14th of March, Sir W. Fergusson made an incision about four inches long on the inner aspect of the thigh, and tied the superficial femoral artery in Hunter's canal, first drawing the sartorius muscle to the inside of the vessel. The artery seemed

healthy and of normal size. The leg was then wrapped in cotton-wool, and the man sent to bed. At ten p.m. the pulsation in the tumour above Poupart's ligament was much less, while below the thrill could not be felt. The leg was quite warm, and the patient was very comfortable. The next day, however, the pulsation returned, and there was great pain in the leg. No secondary hæmorrhage occurred; the wound looked healthy, and on the 30th of March the ligature was easily removed. At this time the tumour was harder, rather smaller, and the pulsation was not so well marked. On the 1st of April, there was an erythematous blush around the wound; the swelling in the upper part of the thigh was increasing, and the man seemed much exhausted. On the 10th of April, a month after the operation, the man died. During the time he was under observation, no bruit was heard over the tumour; the cardiac and respiratory sounds were normal. No tracing with the sphygmograph could be taken, owing to the œdematous condition of the leg.

An examination of the body was made twenty-four hours after death. The incision in the thigh was partly healed, but the edges were in a sloughy condition. On opening the abdomen, a large oval tumour was found occupying the whole of the left side of the abdominal cavity, not extending beyond the median line, but below it passed under Poupart's ligament into the upper part of the thigh; all the small intestines were pushed to the right. The descending colon passed over the aneurysm diagonally from left to right, and then descended into the pelvis; the left ureter also passed in the same direction, and was ultimately connected with its coats. Removing the intestines, another tumour, the size of a cricket-ball, was found on the right side, in front of and a little below the right kidney; this evidently communicated with the larger mass. Passing down nearly in the median line and between these two tumours was the abdominal aorta, the vessels from which were given off in the usual manner. On the right side the iliac and femoral vessels were quite normal; on the left side these vessels were intimately connected with the aneurysm, and the latter, passing along the inner side of the tumour, was stretched over it. The femoral artery had been tied in Hunter's canal, but it was not obliterated; on slitting it up, the inner and middle coats were found divided, and a small piece of soft, pale, non-adherent fibrine lay in the vessel, but no adhesions had taken place. The femoral vein was dilated, and at the junction of the external with the internal iliac vein the canal was so pressed upon by the aneurysm that a probe could hardly be passed. Both the tumours were full of

clotted blood; in the upper and oldest part the sac was lined with pale, laminated fibrine, while lower down, in the upper third of the thigh, where the aneurysm had only recently extended, a large quantity of black coagulum was found. The origin of the aneurysm was seen to be the lower part of the abdominal aorta, just in front of the third lumbar vertebra and the next intervertebral substance. Here, for about an inch and a half, the posterior wall had given way, being very atheromatous at that spot; at first, no doubt, the aneurysm had extended backward and then laterally, but chiefly on the left side. The greater part of the bodies of the second, third, fourth, and fifth lumbar vertebræ was destroyed anteriorly; the surfaces were rough and bare. The intervertebral substances were hardly at all affected. It was difficult to make out whether the aneurysm was true or false; probably at first the sac was formed of one or more of the arterial coats, but now all traces of this have gone. The wall of the large tumour was formed partly of the peritoneum, which, as the blood had burrowed behind it, had been stripped from the abdominal wall, and partly of condensed fibrous tissue; above, the pillars of the diaphragm were stretched over the sac; thus in front the coats were very thin, but everywhere the sac was lined with coagulated fibrine, which gave additional strength. Extending downwards, the blood had followed the course of the psoas and iliacus muscles, and passed under Poupart's ligament into the thigh; no distinct coat could be found here, but the walls were formed by the muscles and fasciæ which were stretched over the false aneurysm; the capsule of the hip-joint and the femur formed the posterior boundary; the periosteum was detached from the femur for five inches below the great trochanter, and the blood was therefore in immediate contact with the bone. There was no limiting boundary anywhere in the thigh; and had the man lived longer, the blood would probably have found its way still lower down. The tumour on the right side was full of fibrine, nearly circular, and connected across the spine with the larger mass; the blood had here passed behind the peritoneum, and partially behind the psoas and iliacus, which were thinned out and stretched over its surface. The whole length of the aneurysm was about fifteen inches; the part below the left groin being about five inches long. The heart and large vessels were quite normal; all the other viscera were healthy. No receptaculum chyli could be found in the mass, and it would seem probable that the rapid emaciation was in part due to the pressure on this duct, and the consequent interference with the supply of chyle to the blood. The œdema of the left

leg was clearly due to the pressure of the aneurysm on the external iliac vein. Dr. C. KELLY, 19*th of May*, 1868.

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35. *Spontaneous rupture of aorta.*

This specimen, sent to me by my friend, Mr. G. E. Shuttleworth, was taken from an old man, aged 77; he had never had any serious illness, and had always been very temperate. He was employed in some light work about a farm. On the evening of the 14th of April he returned home as usual, but complained of pain over his chest; he had undergone no extraordinary exertion that day. He took an ordinary supper and went to bed; in the morning he was found by his grandson, who was sleeping in the same bed, to be quite cold and dead, and lying in a natural position.

On examining the body, the aorta was found horizontally ruptured for about four-fifths of its circumference, just at the commencement of the descending portion of the arch, the uninjured portion being in front. The inner and middle coats were torn to an equal extent; the external coat was separated from them for about an inch all around, and the opening by which the blood escaped was irregular and about two inches long. About a quart of blood had passed through the rent and had pushed the left pleura forwards, so that on opening the chest the heart was found a little to the right and the lung to the left, while between the two was the effused blood covered by the pleura, which had been stripped from the pericardium on that side; thus a little blood was found in the anterior mediastinum, while the greater part was clotted and surrounded the roots of the lungs and the parts in front of the spine; behind, the left pleura was separated from the chest-wall for a short distance. There was very little atheroma of the aorta, but at the seat of rupture there was one spot which was very thin, and here the vessel had first given way. There was no aneurysm nor dilatation of the vessel. The lungs and heart were quite healthy, but contained very little blood. There was no disease of the other viscera. Dr. C. KELLY, 19*th of May*, 1868.

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36. *Malformation of the heart in a case of cyanosis.*

The child from whom this specimen was taken was the last of five, all of whom had died in infancy, but none of the rest had been cyanotic.

The history of the case is imperfect; it was a delicate, unhealthy-looking child, but it did not turn livid unless it was crying or had a cold, when it would become quite blue, especially about the face, hands, and feet. With great care it lived to the age of five months.

At the *post-mortem* examination, the heart was found much larger than usual, and this was due chiefly to the great size of the left ventricle, which was much dilated and hypertrophied; the aorta was normal, and arose from the ventricle in its usual position. The right ventricle was extremely small, and at the top of the septum was a hole, the tenth of an inch in diameter, which allowed a free communication between the ventricles. The pulmonary artery was of normal size, and contrasted strongly with the small ventricle from which it arose; the ductus arteriosus was patent, and admitted an ordinary probe. The right auricle was rather larger and thicker than the left, and the foramen ovale was very large. A trace of a tricuspid valve could be seen, but it was perfectly closed, so that there was no direct communication between the auricle and ventricle on the right side. This adhesion or obliteration of the tricuspid valve must have taken place early in fœtal life; in consequence the blood flowed into the left auricle, and so the foramen ovale could not close; then the mixed stream passed into the left ventricle, which propelled the blood partly into the aorta and partly into the pulmonary artery through the hole at the top of the septum, and this accounts for the very small size of the right ventricle as compared with the well-developed pulmonary artery; for it really had no work to do, and so had not become developed. Some blood would also be sent to the lungs by the ductus arteriosus. Thus the left ventricle, being the only propelling power, became of very large size. The mitral and semi-lunar valves were quite competent. The lungs were well developed and normal. All the other viscera were healthy.

Dr. C. Kelly, *19th of May*, 1868.

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37. *Rupture of the heart.*

Mrs. E., laundress, a small lean woman, who had generally enjoyed good health, died suddenly on Monday, the 18th of November. On the preceding Friday, after eating a large meal, she complained of severe pain in the left side of the chest. This lasted till the day she died. She frequently sat "doubled up," with her two hands pressed upon the chest beneath the left breast; this she had done, more or less, for

some weeks. She became very restless and irritable, and on Saturday she entirely gave up work. On Monday the pain was very severe in the chest and between the shoulders. In the middle of the day she went across a yard to the water-closet, on reaching which she fell down insensible upon the floor, passing her water there; a woman, feeling anxious about her, followed her almost immediately, and she was carried into the house. On seeing her a few minutes afterwards, she was found in the following condition: She was lying on the floor on her back, apparently perfectly unconscious and in deep collapse. The skin was very cold; she was breathing rather quickly and in *whiffs*; the eyes were closed, the pupils rather contracted. No pulse could be felt. Soon the respirations became somewhat stronger and the pulse just perceptible; after a while she spoke indistinctly, but was heard to say, "Let me sit up." She afterwards turned from side to side, and at last, in perhaps three-quarters of an hour from the time she fell, suddenly died.

On inspection, the pericardium was found distended by blood. The heart appeared about the normal size, and felt firm; the quantity of fat about it was not great, but perhaps large in proportion to the amount present in the body generally. The aorta as far as the arch was sound, except a small atheromatous patch; the coronary arteries were hard; the valves were all healthy, and the muscular tissue appeared little if any paler than natural On the external surface of the left ventricle there was observed a line of dark colour, commencing near the septum ventriculorum, at a point about half-way between the apex and base, and extending obliquely downwards for about an inch and a half across the ventricle. On pressing this, a small portion of clot was squeezed out of a minute opening like a pin-prick at its commencement, and the line was found to consist of extravasated blood. On removing some of the carneæ columnæ opposite this minute opening, an aperture was found about the size of a goose-quill, communicating directly with it. The wall of the ventricle was not at all thinner here than elsewhere, and was throughout of about the natural thickness. The left lung was largely adherent, and contained some old tubercle at the apex; the right lung was very firmly adherent at the apex. The arteries at the base of the brain were very hard.

Dr. Peacock *for* Dr. Hooper, 19*th of May*, 1868.

38. *Malformation of heart; absence of pulmonary artery; aorta springing from right ventricle; incomplete septum ventriculorum; patent foramen ovale.*

The heart is that of a male child, aged 3 months, who died from an attack of capillary bronchitis. During life the child was markedly cyanotic. With regard to the auscultatory cardiac phenomena, information is unfortunately wanting.

The heart is of normal size, the blood in all the cavities is dark and not coagulated. The right auricle is somewhat larger than natural; the left is exceedingly small. The foramen ovale is partially closed by a cribriform septum. The pulmonary veins are normal. The right ventricle is considerably larger than the left, its walls also are rather thicker. The left ventricle is small, like the corresponding auricle. The aorta springs from the right ventricle. At about an inch from its origin a short, thick trunk is given off, the size of a goose-quill, which immediately divides into two branches, one of which passing to the right, and the other to the left, are distributed to the lungs. The coronary arteries are given off in the usual situation. The pulmonary artery is absent; no trace of it exists. In the base of the septum ventriculorum in the anterior part, immediately beneath the anterior and left segment of the aortic valve, there is a round opening half an inch in diameter, which communicates with the two ventricles. The remainder of the septum is quite complete. The tricuspid, mitral, and aortic valves are normal. In this case both ventricles evidently discharged their contents into the aorta. The aortic valves are competent.

Dr. T. Henry Green, 19*th of May*, 1868.

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39. *Congenital malformation of heart; abnormal septum in left auricle.*

Jane D., aged 38, was admitted into St. Bartholomew's Hospital, on the 11th of March, 1868, complaining of a feeling of tightness across the chest, and of shortness of breath amounting almost to orthopnœa; she suffered also considerable pain between the shoulders.

Her legs and body generally were anasarcous, but the œdema was not very great. Her pulse was feeble and very rapid, and somewhat irregular. The heart's action was so rapid and irregular that it was impossible to say for certain whether any unnatural sounds accompanied

it. The respiratory sounds were natural. For the first two days she seemed to improve somewhat; her breathing became easier, and she was able to lie down in bed. On the morning of the 20th of March she was suddenly seized with great pain in the chest, and presented all the symptoms of extreme cardiac embarrassment; her respiration became more and more laboured, and she sank without rallying.

History.—She had never been very strong, but had enjoyed fair health, suffering a good deal from winter-cough, and having occasionally had slight attacks of hæmoptysis. She was a widow and the mother of four children; her labours had been accompanied by considerable hæmorrhage, and during several of her pregnancies she had experienced slight attacks of hæmoptysis. The œdema of the legs and feet had existed for several weeks, but she had been obliged to lay up only a few days before admission to the hospital. She attributed her illness to over fatigue and insufficient nourishment, consequent on having to attend her husband during his illness; and since his death (three months before), to her exertions in maintaining her family.

At the *post-mortem* investigation the lungs were found to be œdematous; the pericardium contained about half an ounce of clear serous fluid; the heart was of normal shape and size, weighing ten ounces and a half, and the right and left ventricles were of normal proportions. On laying open the left auricle, it was seen to be divided by a membranous septum, which extended completely across it, separating the portion of the auricle in connection with the septum auricularum, and that into which the pulmonary veins open, from the auricular appendage and the portion immediately in connection with the auriculo-ventricular opening. The only communication between these two chambers was by means of an elliptical opening, measuring four-tenths of an inch in its transverse, by seven-tenths in its longitudinal, diameter; this opening was situated at the upper part of the septum. (See Plate VIII., figs. 1 and 2.) The general shape of the upper chamber was somewhat like a funnel, the neck of the funnel resting on the base of the septum ventriculorum. The muscular wall of the auricle was of its usual thickness, but the capacity of the two chambers together must have considerably exceeded that of a normal auricle. On the exterior of the auricle a depressed groove marked the line of the septum. The pulmonary veins about the root of the right lung were of unusual size, but no abnormal disposition was noticed. The visceral layer of the pericardium over the left auricle was a good deal ecchymosed. The rest of the viscera were quite natural.

Remarks.—I have been unable to meet with a similar instance recorded. Andral, in his Pathological Anatomy, states that he has seen a heart with three auricles, and gives, as one of his divisions of excessive development of the heart, "a supernumerary septum forming an imperfect division of one of the natural cavities;" but he does not describe any that he had met with. Supernumerary septa appear to be almost exclusively confined to the right ventricle, numerous cases of more or less perfect division of the right ventricle being described by English and foreign authors.*

The case has appeared to me to be of unusual interest, from the fact of the woman being capable of undertaking all the ordinary duties of life and enjoying fair health until her strength was overtasked, notwithstanding that the whole blood-stream had to pass through such a narrow opening. It is evident from the absence of hypertrophy or dilatation on the right side of the heart, as well as from the want of hypertrophy in the wall of the left auricle itself, that the blood-current cannot have been seriously obstructed.

I have no explanation to offer to the Society as to the character of the malformation. It is certainly not due to any arrest of development, nor, I think, to any hyper-development of normal parts, and there was no evidence of any pathological changes having occurred in the heart during uterine life or subsequently.

Dr. W. S. Church, 19*th of May*, 1868.

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40. *Aneurysm of the ascending aorta, opening into the pulmonary artery.*

John N., aged 48, a brushmaker, tall, and well built, was admitted into the Middlesex Hospital, under my care, on the 19th of March, 1867. He had never suffered from rheumatism in any form, and had always enjoyed good health until the 25th of September, 1866, when, after falling off a plank in a saw-pit, he for the first time complained of palpitations and shortness of breath. He continued to work, however, till Christmas, when his ankles began to swell, and soon the swelling ascended the legs, until in February his hands and face were slightly swollen, and last of all his abdomen.

On admission there was tense anasarca of both lower extremities and of the scrotum and penis, and slight pitting of the trunk and puffi-

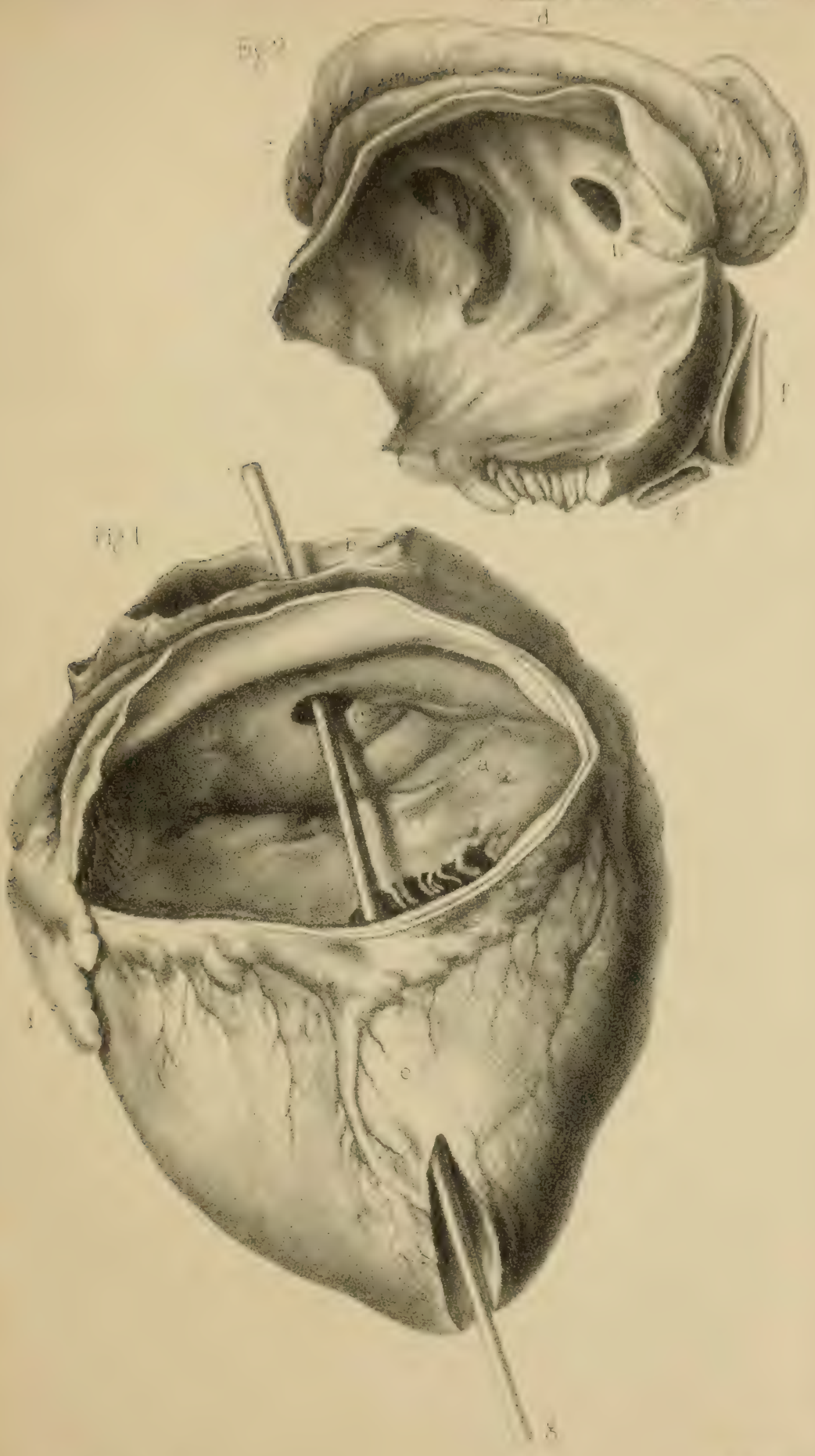
* Vide Peacock, Malformations of the Human Heart, p. 60.

DESCRIPTION OF PLATE VIII.

This Plate illustrates Dr. W. S. Church's Specimen of Abnormal Septum in the Left Auricle of the Heart, described at p. 188. From drawings by Mr. T. Godart.

Fig. 1 shows the entire heart, with the wall of the left auricle laid open close to the base of the heart, and reflected upwards, so as to represent the lower of the two chambers into which it is divided. *a*, Lower chamber; *b*, upper chamber; *c*, orifice of communication between the two chambers, by which alone the blood coming from the lungs reached the left ventricle; *d*, appendix of auricle; *e*, left ventricle; *f*, *g*, a probe passing from the upper into the lower chamber of the left auricle, thence through the mitral valve, and out by an incision in the wall of the left ventricle.

Fig. 2 shows the septum in the left auricle, as seen from the upper chamber. *a*, Infundibular portion of upper chamber; *b*, foramen of communication between the two chambers; *c*, groove on the outside of the left auricle corresponding to the septum; *d*, wall of the lower chamber; *e*, appendix of the auricle; *f*, aorta; *g*, pulmonary artery.



T Hodgkin del. J West sc.

W West Imp.

ness of the face. The abdomen was large, measuring thirty-eight inches in girth at the umbilicus, and presenting the ordinary signs of accumulation of fluid in the peritoneum. There was slight lividity of the lips, but the face and general surface of the body were remarkable for their extreme pallor. Pulse, 112, feeble, but regular. The patient suffered much from palpitations on the slightest excitement, and from coldness of the feet. The apex of the heart could be seen and felt beating between the sixth and seventh ribs, two inches to the left of the line of the nipple. The cardiac dulness was much increased, chiefly towards the left side; transversely it measured five inches, and vertically three inches and a half. Over the whole of the cardiac region there was a prolonged systolic bellows-murmur, loudest at the apex, but also very loud at the base and at mid-sternum, where it was louder than over the space intervening between this and the apex; it was also heard at the back of the chest, but was not propagated upwards along the great vessels. The respirations were 36, and in a great measure abdominal; sleep was interrupted by a frequent cough, and over the whole of both lungs the expiration was prolonged, and there were dry bronchitic râles. The urine deposited abundance of lithates and contained a small quantity (about one-tenth in volume) of albumen, but no tube-casts. The patient talked a great deal, and often shouted in his sleep, but during the day his mind was quite clear, and he was always very confident of his ultimate recovery. His appetite and digestion were good, and his bowels regular. He was treated with diuretics including digitalis, with stimulants and subsequently with iron; but no material improvement was ever noticed, nor any change of importance in the physical signs. He became gradually weaker, while the dropsy and bronchitic signs increased, until the 23rd of April, when he died, at last somewhat suddenly, apparently by syncope.

Post-mortem examination.—There was a large white patch on the anterior surface of the right ventricle; the heart was large, and its right cavities much dilated, while the wall of the right ventricle, about its middle, was four lines in thickness. The tricuspid valves were healthy, but the opening of the pulmonary artery seemed unusually large, and measured three inches and ten lines in circumference. An inch and a half above the pulmonary valves there was a circular hole in the coats of the artery, leading to an aneurysmal dilatation of the aorta. This orifice was four lines in diameter, and its margin was regular and rounded, while on its aortic side it was surrounded by a fringe of minute vegetations. For some distance round the orifice the

wall of the pulmonary artery was pitted and rough. The left auricle and ventricle were dilated. There were no vegetations on the mitral valve, and the edges of the valve were only slightly thickened, but the mitral orifice was of large size. The wall of the left ventricle was half an inch thick at its base. The aortic valves were slightly thickened, but competent. Immediately above them, the aorta became uniformly dilated into a fusiform aneurysm, three inches and a half in diameter, ceasing somewhat abruptly before the origin of the innominate artery. The walls of this aneurysm were very atheromatous and anteriorly much attenuated. The opening into the pulmonary artery already referred to was situated in its anterior wall, one inch and three-quarters above the semi-lunar valves. Each pleural cavity contained about six ounces of serous fluid. The apex of the right lung was firmly adherent and condensed and puckered from old disease. Elsewhere the lungs were crepitant, but posteriorly they were œdematous. There were several pints of clear serum in the peritoneum. The liver weighed sixty-two ounces, and was moderately congested and fatty. The spleen weighed five ounces, and its texture was firm. Each of the kidneys weighed five ounces and a half; their capsules were somewhat adherent, and their surfaces slightly granular.

Remarks.—This was an example of a very rare termination of aortic aneurysm. Similar cases have been recorded by Thurnam,* Stokes,† Peacock, and other observers. Seven were collected from different sources by Dr. Sibson,‡ and most that are on record in English medical literature have been communicated to the Society in a tabular form, during the present session, by Dr. Peacock. (See *antea*, p. 126.) The history of the case pointed with tolerable clearness to an injury, eight months before death, as the cause either of the aneurysm or of its rupture into the pulmonary artery, and the appearances exhibited by the margin of the opening made it probable that this had existed for a considerable time before death. The physical signs were mainly those of mitral regurgitation, except that there appeared to be a second centre of origin of the systolic bellows-murmur at mid-sternum. But one of the most extraordinary features in the man's case was his extreme pallor, which was greater than what is usually observed in cases where there is a concurrence of aortic regurgitation and fatty kidneys, while the symptoms

* Medico Chirurgical Transactions, 1840, p. 349.

† Diseases of the Heart and Aorta, 1854.

‡ Aneurysm of the Aorta, 1858, p. 10.

and physical signs did not indicate the existence of either aortic regurgitation or fatty kidneys. In most cases of varicose aneurysm of the aorta the opposite appearance of lividity has been noticed, but Dr. Stokes cites a case from Professor Smith, where there was also great pallor of the surface.* The extreme anæmia and coldness of the feet in the case now related may have been due to the large quantity of arterial blood from the left side of the heart passing back at once into the pulmonary artery. The severe palpitation and rapidly advancing dropsy have been observed in most cases of the sort which are on record. Dr. MURCHISON, 19*th of May*, 1868.

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41. *Acute peri-, myo-, and endo-carditis, with secondary deposits in the kidneys.*

This patient was a female servant, aged 30, who was admitted into the Middlesex Hospital, under Dr. Murchison's care, on the 10th of March, 1868. There was no history of intemperance, rheumatic fever, dyspnœa, or palpitation in the case, and the patient herself dated her illness back to five weeks before admission. Shortly after being out of place for two months, during which time she had been very destitute and much exposed to cold and wet, she began to suffer from dyspnœa and cough, pains in the joints, and swelling of the legs, with occasional shivering and morning sickness. She continued at work, however, until six days before admission. On admission the following symptoms were noted: Countenance pasty and anæmic; considerable pitting of legs and slight œdema of trunk, but no pain or swelling of joints. Pulse 108. A soft to and fro pericardial sound, audible over the whole of the cardiac region, as well as a diastolic bellows-murmur at the base. Respirations 42, and much embarrassed; frequent cough; coarse moist râles over back of both lungs, increasing towards the bases, where the percussion-resonance is impaired, but there is nowhere absolute dulness or tubular breathing; no bronchitic râles in front of chest. Urine turbid, contains about a fifth (in volume) of albumen, and deposits a copious sediment, made up of renal epithelium and epithelial casts, with a very little blood. The patient was treated with diaphoretics and stimulants. On the evening of the 11th of March, and again on that of the 12th, she had a very severe rigor, the second rigor being followed by a great increase of the dyspnœa, amounting to orthopnœa, the respirations

* Op. cit., p. 554.

rising to 50, the pulse to 150, and the temperature to 102° Fahr. There was also extreme restlessness, with frequent vomiting; but the only signs of increased pulmonary mischief was an increase of the dulness and deficiency of breathing over the lower half of the left lung. In the forenoon of the 14th of March the patient had a third severe rigor, lasting for an hour, and followed by urgent vomiting and a still further increase of the dyspnœa and fever, the respirations being 54 and extremely laboured, and the temperature 103°·4. The albumen was increased to one-half (in volume). In the forenoon of the 16th of March there was a fourth severe rigor, the temperature shortly before being 98°·2, and an hour or two after it, 104°·8. On the 17th of March, at two p.m., she had a fifth rigor, lasting ten minutes. At ten a.m., the pulse was 84, respirations 48, and temperature 99°·2. At eleven a.m., there was a sixth rigor, and at half-past one p.m. the pulse was 120, respirations 56, and temperature 105°. The cardiac dulness was now increased, and both the peri- and endo-cardial sounds were faintly heard. A pill of quinine (gr. ij.) and extract of henbane (gr. j.) was now ordered to be taken every four hours. There was a seventh rigor on the same evening, the temperature during the rigor being 103°, and after this there was no recurrence of rigor until the evening of the 18th. After this eighth rigor the patient had a better night than she had had since admission, and next morning she seemed much better, sat up and took her breakfast; but immediately afterwards she fell back on the pillow, vomited freely, and became very pale, and was dead within three minutes.

Post-mortem examination.—Seven ounces of turbid serum in the pericardium; surface of the right auricle roughened from granulations of recent lymph; aortic valves incompetent and fringed with large loose vegetations, the valves themselves softened and one of them perforated by an opening large enough to admit a goose-quill, while another was ruptured through its middle down to its attachment, the torn edges being rough and irregular. Mitral valves healthy; heart apparently of normal size, its muscular tissue generally pale and soft, and presenting on the inner surface a well-marked mottling, the columnæ carneæ of the mitral valve being at some places converted into a pale-yellow opaque tissue. On microscopic examination, the muscular tissue generally was seen to be in a state of granular degeneration, and in the lighter portion all traces of the transverse striæ had disappeared. Left pleural cavity contained twenty ounces and a half of turbid serum, and the right eleven ounces and a half of clear straw-

coloured serum. Both lungs much congested and œdematous, but nowhere presented the granular consolidation of pneumonia. About two pints of clear serum in the peritoneum. Liver congested, spleen large, soft, and diffluent, but with no infarctions. Both kidneys very large and smooth, capsules non-adherent, cortices hypertrophied, and the organs presenting on section all the appearances of a large white kidney, with the addition of numerous minute recent embolisms of a pale-yellow colour, and surrounded by injected ruins. Uriniferous tubes crammed with granular, but not oily, epithelium. Brain healthy, and very little fluid either in the lateral ventricles or at the base.

Remarks.—This appeared to be an instance of acute inflammation attacking all the tissues of the heart simultaneously,—concurrent pericarditis, myocarditis, and endocarditis. The *post-mortem* appearances corroborated the opinion formed during life that there was no cardiac disease of a date antecedent to six weeks before death. The severe attacks of rigors followed by urgent vomiting and great rise in the temperature were very remakable, and could only be accounted for by the numerous secondary (pyæmic or embolic?) deposits found in the kidneys. The immediate cause of death was probably the rupture of one of the aortic valves. Dr. Murchison, 19*th of May*, 1868.

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42. *Disease of the mitral valve, with rupture of one of the chordæ tendineæ.*

Eliza S., aged 12, a school-girl, was a patient in the Middlesex Hospital, under Dr. Murchison's care, from the 29th of April to the 4th of June, 1867, suffering from palpitation and dyspnœa, with pains in the calves and purpura of the legs, (which last recurred on three different occasions on first getting up), and presenting the usual signs of hypertrophy of the heart, and mitral incompetence, with slight albuminuria. When only four years old, she had suffered from rheumatic fever and bronchitis, but after this she appeared to have enjoyed good health until four months before coming to the hospital, when she began to complain of languor and palpitations, but the purpura and pains in the calves only came on a fortnight before admission. After leaving the hospital, with the exception of occasional palpitations and a bad appetite, she suffered little, and was able to go about till February, 1868, when she again began to complain of dyspnœa and great languor, with

pains in the calves; and after about a month, on the 10th of March, she was admitted into the hospital a second time. Her face was now pale, but her lips were slightly livid; the veins in the neck were turgid, and over both legs and thighs were numerous purpura-spots up to the size of a split pea. There was no anasarca; the apex of the heart was beating very tumultuously between the fifth and sixth ribs, in the line of the left nipple; the cardiac dulness was much increased, measuring transversely three inches and a half; there was a prolonged systolic bellows-murmur heard over the whole chest, but loudest over the left apex, and the second pulmonary sound was strongly accentuated. Pulse 120. There was coarse crepitation at the base of both lungs, and a small quantity of albumen in the urine. The patient still complained much of pain in the calves, but there was no pain or swelling in the joints. At first she improved considerably under treatment, and she had been up for several days, when, on the morning of the 29th of March, she had a rigor, followed by constant retching, the pulse rising to 144, and the temperature to 105°·4. There was now also unmistakeable pericardial friction in addition to the endocardial sound; the heart's action was still very tumultuous. These symptoms continued, and on the morning of the 31st of March the tongue was dry and she was scarcely conscious; at half-past four p.m. she died.

Post-mortem examination.—The pericardium contained about an ounce and a half of turbid serum, containing flakes of lymph, and there were several patches of increased vascularity and roughening from recent lymph on the surface of both auricles and over the origin of the great vessels. The heart weighed nearly ten ounces, and there was considerable hypertrophy of the left ventricle. The aortic valves were competent and healthy, but there were extensive vegetations on both mitral flaps and on the inner surface of the left auricle. One of the chordæ tendineæ of the mitral flap nearest to the septum was torn through, and one of the torn ends was entangled in a recent *post-mortem* coagulum which was adherent to the vegetations on the opposite flap. There was incipient atheroma of the aorta; there were firm adhesions over the back of both lungs, which were slightly congested and œdematous. The liver weighed forty-six ounces, and was only slightly congested; but the spleen weighed twenty-six ounces, and was very soft, and contained three large recent infarctions. The kidneys were large and smooth, weighing together twelve ounces and a half; their capsules were non-adherent; the cortices were hypertrophied and pale, and contained several small embolisms, old and recent.

Remarks.—The immediate cause of death in this case was no doubt the supervention of acute pericarditis. The rupture of the chordæ tendineæ of the mitral valve was probably due to the concurrence of tumultuous cardiac action with softening of the tendinous cords from disease. It is impossible to say from the symptoms how long this rupture had existed before death.

Dr. MURCHISON, 19*th of May*, 1868.

IV.—DISEASES, ETC., OF THE ORGANS OF DIGESTION.

A. TONGUE AND DIGESTIVE CANAL.

1. *Stricture of the sigmoid flexure. Colotomy.*

The subject of this specimen was a shrivelled-looking old man, with a pinched, anxious aspect. He applied at King's College Hospital, on the 30th of September, 1867, stating that his bowels had not been properly opened for fully a fortnight, although he had on two or three occasions passed small hard masses by the rectum. His belly had been gradually increasing in size, but he had not been troubled with vomiting. About two months previously he had applied at the Middlesex Hospital in a somewhat similar condition, but with the constipation of only two days' duration. He there had medicines which relieved him. When first seen by me, he had a distressed, pale, pinched face, a dry, brown tongue, and a very small pulse of 120. His breathing was almost entirely thoracic. The belly was much distended and generally pyriform in shape. The epigastric, right iliac, and left lumbar regions were somewhat more prominent than the other parts of the abdomen. Percussion yielded everywhere a tympanitic sound, but differing according as the three above-mentioned prominences and their neighbourhoods were percussed, or if the regions about the umbilicus were selected. Over the former the percussion-ring had a peculiar flatness,—was, as it were, damped, differing both in tone and in intensity from that in the more central regions. The inspection of the abdomen and the results of percussion seemed to indicate a colon full of mixed air and solid or fluid matter, lying round a distended small intestine. The examination of the rectum gave the following results: Its anterior wall was less readily pushed before the finger than usual. An elastic, indefinite, resisting something opposed its free movements. Even when

the man was doubled up, nose and knees together, no stricture could be detected. From this evidence I inferred that the obstruction was probably seated high up in the rectum or in the sigmoid flexure, but that, if in the latter, it was in all likelihood driven downwards by the enormous pressure from above, so as to coil the gut considerably. Except the age and wizened appearance of the patient, there was nothing to indicate the presence of cancer. Previously to my seeing him, the house-physician had employed enemata with the long tube without result, and purgatives had been fully administered out of the hospital. Deeming the case one that fairly opened up the propriety of operative interference, I obtained the advantage of Mr. Henry Smith's concurrence. We resolved, however, to give the long tube enema a last chance. But by eleven o'clock the same evening things had changed very much for the worse. The man was becoming torpid, with a flickering scarcely perceptible pulse. He had several times vomited altered blood, but no stercoraceous matter. The services of Mr. Smith not being procurable, the house-surgeon, Mr. Trevor, proceeded to operate on the descending colon. He made a transverse incision into the left lumbar region, of about four inches long. The bowel was readily exposed, and after being tied to the edges of the wound was freely opened. A large quantity of fetid gas and fæces at once escaped; a state of comparative comfort almost directly ensued. Twelve hours after the operation the pulse was 120, and much fuller. The patient expressed himself as being quite comfortable, and his tongue had a trace of moisture on its edges. The vomiting had ceased, and the stomach had retained a good allowance of brandy and ice. During the next three days he continued to progress very favourably, his pulse even falling to 96. On the fourth day after the operation, however, the pulse and breathing ran up; his skin grew quite hot, he became delirious, and died on the morning of the 7th of October, 1867, that is, seven days after the operation. For the notes of the *post-mortem* examination I am indebted to Dr. Kelly, the pathological registrar.

On opening the abdominal cavity, the descending colon was found adherent to the wall of the left lumbar region, and the finger could be easily introduced by the external wound into the bowel. There had been no escape of fæces internally, nor any general peritonitis. A hard mass could be felt in the pelvis about opposite the first sacral vertebra connecting the lower part of the sigmoid flexure to the posterior part of the bladder, a little to the left of the median line. This adhesion was irregular and soft, and was torn through when the parts were

removed from the body. When the bowel was open, a large ulcer, nearly circular in shape, with raised, soft edges, and about two inches in diameter, was found to correspond to the adhesion between the sigmoid flexure and the bladder. Above this ulcer the gut was greatly dilated, but at its seat so great a degree of constriction existed that a No. 10 catheter could only be passed with some little violence. Round about this ulcer, the mucous coat was deeply congested and thickened. The matting of the external adhesion only had prevented the escape of the contents of the bowel into the peritoneum. Nothing at all resembling cancer could be found in the neighbourhood of this ulcer. Lower down a small patch of recent lymph was found in the peritoneum, in front of the rectum, but there was no internal disease opposite this point. The ileum was found adhering to the cæcum by two old and broad adhesions. No disease of the mucous coat could be found opposite either of these, nor did they occasion any constriction. Peyer's patches and the solitary glands throughout the bowel were everywhere quite healthy. The various lymphatic glands, the pelvic bones, and the vertebræ were also sound. There was pneumonia of the lower lobe of the right lung, and congestion of the left lung. These lesions had evidently been the immediate cause of death.

Dr. A. B. Duffin, 15*th of October*, 1867.

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2. *Specimen of milky or chylous fluid removed from the abdomen.*

This fluid was sent to Dr. Wilks by Dr. Ormerod, of Brighton, with the following history:—

"W. P., a hawker, aged 24 years, a dark, unhealthy-looking man, first came under my observation in November, 1864. He had then chronic capsular rheumatism of the joints of the lower extremities, with great general weakness. Under the use of iodide of potash and hot sea-water baths, he got well, or at least the rheumatism did; for he always looked ill and aged, though I never could ascertain the presence of any organic disease. In particular, his urine was sp. grav. 1020, and free from albumen. In August of the following year he had a relapse, after exposure to wet and cold in his trade, and the same treatment restored him. He re-appeared in July, 1867; he had again caught cold, but this time it was not the joints, but the lower limbs and the scrotum that swelled. He struggled on for some time, not liking to submit to the discipline of the hospital, but came in at last,

with a congested face; scanty, loaded urine, not albuminous; abdomen tense with flatus, but containing some fluid, and its small superficial veins generally enlarged. He was very intolerant of pain, quite childish under any present discomfort, and on the 14th of July, at his urgent request, the abdomen was tapped. Fourteen pints of an opaque milky fluid were drawn off, sp. grav. 1010. The fluid curdled slightly, and effervesced a little on the addition of acetic acid. It displayed a few compound granular cells under the microscope, but seemed to be chiefly composed of small amorphous particles, scarcely separating on standing. On the 18th of July the wound re-opened; and for three days there was free drainage of a similar fluid, which coagulated spontaneously into gelatinous masses. As all tenderness of the abdomen had subsided, a careful examination of it was made; but no enlarged organ was perceptible, only there was an undue amount of dulness over the right side, with a sensation as if a coil of intestine occasionally knocked against the anterior wall. On the 3rd of August he was tapped a second time, eighteen pints and a half being evacuated. On examination with the microscope a few compound granular cells were seen in this fluid, as on the previous occasion, and some large cells which were less granular. The amorphous molecules, which moved with a slight flickering, were the most numerous objects. Acetic acid caused a thick granular curd to rise to the surface; boiled with liq: potassæ the fluid turned dark brown. Nitric acid and heat gave a very slight precipitate. On the 16th of August he was tapped again. Seventeen pints of the same fluid were let off this time, and for one or two days there was a discharge from the wound. On the 22nd he had a slight attack of pleurisy with effusion on the right side, and, while this was going on, the abdomen ceased to fill so rapidly. On the 1st of September he was tapped for the fourth time, and twelve pints and a half of fluid were let off, still of the same character. On the 6th he became delirious for a few hours, his pulse retaining its power all the while. After free vomiting of a bilious fluid he suddenly recovered. On the 14th of September he was tapped for the fifth time, and fourteen pints of a similar fluid were let off. As soon as he had recovered from the operation he left the hospital, without saying a word to any one, and has not since been heard of. Some of the fluid from the third (?) tapping had been shaken up with ether, and left in a closed tube. After many days the ether was found to contain a large quantity of fatty matter in solution, and some of this had collected into little white tufts, which, under the microscope, presented the characteristic form of stearic acid. My impression is that by some

means the trunks of some of the chyle vessels had been perforated, and that here was the source of the milkiness of the fluid in the peritoneum. But the case is not clear. He scarcely got as thin as one would have expected him to have done under such circumstances. And, assuming the correctness of this view, still there is the general dropsy—slight, it is true—to be explained. The cause also of the change in the peritoneum, which induced the perforation of the lacteals, does not appear. Tubercle of the peritoneum suggests itself as the first starting point of this curious disease; but I have nothing more than the very doubtful observation of a thickened bowel to offer in support of this conjecture."

Dr. Wilks had examined the fluid, and found it to have a specific gravity of 1010, containing little or no sugar and precipitating no caseine by acids. The microscope showed in it nothing but innumerable granules, and no distinct oil-globules; it coagulated by heat, and on standing a coagulum was spontaneously formed. The fluid therefore contained no milk, but was of a chylous character, holding fibrine and albumen.

Dr. Wilks stated that similar cases have been recorded, but none in the Society's *Transactions*. The only case having any pathological resemblance to it was to be found in the preceding volume, in which the thoracic duct having become obstructed, the receptaculum chyli had burst and set up a fatal peritonitis. He had seen two cases resembling the present, one of which was reported by Dr. Hughes in the Guy's Hospital Reports for 1841. Obstructions of the lacteals were not unfrequently met with in persons who had died of cancerous or tuberculous disease of the mesentery, sometimes even distinct cysts holding chyle which easily ruptured on pressure. The subject must also be considered in connection with those cases where a milky discharge had occurred on the surface of the body in connection with open lymphatic vessels, because no explanation founded on obstruction of the thoracic duct or of its immediate tributaries could account for the occurrence of similar milky fluid in other serous cavities of the body. It is generally said that pure lymph is a clear transparent fluid, and that the milky character of the chyle is due to the presence of fat. This may be true, but nevertheless it is a fact that in the case related by Dr. A. B. Buchanan in the forty-sixth volume of the *Medico Chirurgical Transactions*, where a fluid transuded from the thigh, it was often milky in character. The same was the case in a man who was lately in Guy's Hospital under Mr. Hilton, where the fluid was often of an opaque milky colour. If, therefore, the lymph in various parts of the body may

become opaque, an obstruction of a lymphatic duct may account for the milky character of the fluid found occasionally in the serous cavities. In a remarkable case brought before the Society by Sir W. Ferguson (*Transactions*, Vol. XVI., p. 184) the fluid of a supposed hydrocele was of a milk-white character, and thus he gave it the name galactocele. This fluid was analysed by Dr. Geo. Harley, and he suggested whether it had not been a simple serum rendered opaque by the fatty matter of the blood. Dr. Wilks, *15th of October*, 1867.

Sequel of the case by Dr. Ormerod.—The man re-appeared as a patient of the Brighton Dispensary, and had the abdomen tapped once more, a similar fluid being evacuated. Soon after this he died, on the 4th of November, 1867. I am indebted to Mr. N. P. Blake for an account of the *post-mortem* appearances. I regret that they are so very imperfectly recorded, but the examination was made under great difficulties. Body much emaciated, abdomen containing about sixteen pints of the same milky fluid. The peritoneum was rather white and opaque; but presented no growths on its surface. Close to the spine, behind the intestines, extending from the liver to the promontory of the sacrum, and including the upper part of the right kidney, was a hard white nodulated tumour. The kidneys were both healthy; spleen large and soft; liver small, thin, thickly studded with masses of a dull white colour from one to three lines in diameter. The left subclavian vein and its affluent vessels were plugged with a light-coloured ragged clot, evidently of long standing. It was softened in the centre, and at one point was firmly adherent to the walls of the subclavian vein. The opening of the thoracic duct appeared healthy, between this clot and the opening of the jugular vein. Behind the innominata, pressing on it, but not involving its coats, was a white mass, about an inch and a quarter in diameter, just like the masses found in the abdomen. The mediastinal glands were generally healthy. The heart and right lung were healthy; the left lung was compressed against the spine by recent pleural effusion of an opaque yellowish fluid, quite unlike that which was found in the peritoneal cavity. The lungs were not examined internally. A portion of the mass from the abdomen, and that from the neighbourhood of the innominate vein, as well as some of the nodules from the liver, were brought to me for examination. Those from the abdomen and the chest were identical in structure and reactions. They were not dyed readily by carmine, nor did they change the colour of iodine. They consisted of an imperfectly fibrous

structure, the fibres not being simply such, but rather mis-shaped cells and amorphous granules, strung in rows, with many fat-cells. No single cell of characteristic form could be found anywhere, but the field was studded over with little dark specks, appearing on the face of the section. Under a higher power these were resolved into radiating bundles of crystals insoluble in acetic acid, and unaffected by polarized light. The deposit in the liver was more woolly, contained no fat-cells, none of the crystalline fatty deposits, nor any well-developed nucleated cells. It appeared to be of more recent formation.*

Dr. ORMEROD, *20th of November*, 1867.

Report on the chemical analysis of the fluid extracted from the peritoneum, by W. Marcet, M.D., F.R.S.—The fluid is a white emulsion, and looks like milk. I observed no fibrine to be present in it, this substance having been probably intentionally or accidentally removed. The fluid is stated in Dr. Ormerod's paper to coagulate spontaneously into gelatinous masses. It has a distinct smell of carbolic acid, a very small quantity of that substance having been added to it, apparently for its preservation; the milky fluid does not emit the slightest odour of decomposition, and has not curded; a few white concrete masses may, however, be observed at the bottom of the bottle, which disappear on shaking. On standing undisturbed, the liquid separates into two layers, and after about two days the bulk of the upper white layer was rather less than half that of the whole fluid. The presence of carbolic acid must have interfered with the correctness of the analysis of the fluid; but if a very small quantity only, say a drachm of carbolic acid, had been added to the quantity I received, amounting to about three-quarters of a pint, an inquiry into its composition would still, I believe, be worth while undertaking, with the view to the determination, if possible, of the nature of the fluid, and I have consequently submitted it to analysis, being aided in this work by my assistant, Mr. M. O. Salter.

Reaction of the fluid . . .	alkaline.
Specific gravity	1012·5

On boiling the fluid, no coagulation took place; indeed, no change was observed; but the addition of nitric acid caused a precipitate to appear, of a dark orange colour. A comparative experiment was made

* A portion of these new growths was sent to Dr. Wilks, but it was so dry that little could be made of it. Dr. Wilks found "nuclei and fibre, but no cells deserving the name of cancer."—ED.

with milk mixed with a little carbolic acid, when on the addition of nitric acid the same dark orange colour was obtained as in the case of the emulsion. When mixed with chloride of ammonium, and then boiled, the fluid also yielded a precipitate. On adding acetic acid in excess to the fluid, and then boiling, no precipitate occurred; but after being mixed with a solution of chloride of sodium, the application of heat to the boiling point was productive of a coagulation or bulky precipitate. The same test applied to the white of an egg yielded a similar result. These experiments show the fluid to contain albumen. A drop or two of dilute acetic acid added to the peritoneal fluid, so as just to impart to it an acid reaction, gave rise to a precipitate redissolving in an excess of the acid. Again on the evaporation of the fluid in a capsule, on a water-bath, after half an hour the contents of the capsule were found to have become quite thick, although not from coagulation; a skin had formed on the surface, very like that which occurs on boiled milk. These experiments appear to suggest the presence of caseine in the peritoneal fluid under consideration; other substances in the body, however, held to be very different from caseine, exhibit the above-mentioned characters; thus, pancreatic juice and the fluid of the eye yield a precipitate or coagulate on the addition of acetic acid, which precipitate redissolves in an excess of the acid; again, I have seen albumen, under certain circumstances, fail to coagulate on the application of heat, but turn into a thick homogeneous mass from evaporation on a water bath, yielding a skin precisely as milk would do. We cannot, therefore, conclude from this that the peritoneal emulsion contains caseine.

The fluid filtered from the precipitate obtained with dilute acetic acid yielded a precipitate or coagulation with nitric acid. This shows the presence of two albuminous substances, namely, one in small quantity resembling caseine, and another in a larger proportion—albumen; I have attempted to separate these two substances from each other, in order to effect their quantitative determination. The other substances present were found to be sugar, bile-acids, fatty matters, chlorine, phosphoric acid, a trace of sulphuric acid, a trace of lime, soda, and potash.

The presence of sugar was determined in water, on which 121·59 grammes of the peritoneal fluid had been made to dialyse. About one-third of the whole of the diffusate being evaporated nearly to dryness, a portion of the fluid residue on being boiled with sulphate of copper, tartaric acid, and potash, yielded a red precipitate of sub-oxide of

copper. Carbolic acid tested in a similar way gave no precipitate, consequently one-third or forty grammes of the peritoneal fluid dialysed contained enough sugar for the satisfactory application of the test. With the object of confirming the above test for sugar, the remainder of the concentrated diffusate, after being set aside for about a month, was again tested with the copper-solution, when no reduction took place, obviously owing to the spontaneous decomposition of the sugar the diffused fluid had previously contained. The bile-acids were found to exist in the peritoneal fluid by submitting it to Pettenkofer's test. For the quantitative analysis the chlorine was determined volumetrically in the diffusate of the 121·59 grammes of the fluid, which method may be considered as giving very accurate results. The substance resembling caseine was precipitated with dilute acetic acid, collected on a weighed filter, dried and washed with ether; the albumen was coagulated in the filtrate from the above experiment, also collected on a weighed filter, and washed with ether.

The fatty matters were determined by two different processes, which yielded similar results showing the accuracy of the determination; in both cases ether was the solvent.

The tabular result is as follows:—

Composition of the peritoneal fluid in 1000 *parts.*	
Water . . .	947·73
Solid matters . . .	52·27
Albumen . . .	17·26
Substance resembling caseine .	2·39
Fatty matters . . .	19·93
Chloride of sodium . .	6·51
Bile and sugar, phosphoric acid, lime, and other undetermined substances	6·18
	1000.00

I shall now offer a few remarks on the present analysis, which appears to me to show a very great analogy between the peritoneal fluid and chyle.

1st. The peritoneal fluid presents the same milky appearance as chyle.

2nd. Like chyle it exhibits an alkaline reaction.

3rd. Lehmann observes (Phys. Chem., Vol. II., p. 284): "When

boiled, it [the chyle-serum] does not so much form coherent flakes as a milk-white opaque fluid, and it becomes covered on evaporation by a colourless membrane." He adds that "the residue of the evaporated chyle, treated with water, yields a solution which may be rendered turbid by neutralizing it with acetic acid," and, moreover, the "aqueous extract of the residue of the chyle presents great turbidity on being boiled with hydrochlorate of ammonia, as well as on the addition of nitric acid." The peritoneal emulsion may be considered as presenting the same characters, although not tested in precisely the same way.

4th. The proportion of water in chyle (of horses) fluctuates, according to the investigations of different inquirers, between 91 and 96 per cent. (Lehmann), which agrees very closely with the proportion of water in my analysis of the peritoneal fluid, viz., 94·77 per cent.

5th. The amount of albumen in chyle (of horses) was found by Tiedemann and Gmelin to be from 1·93 to 4·34 per cent. The mean of several analyses of the chyle of horses by Lehmann does not vary much from the above. In the case of the present peritoneal fluid, the albumen may be considered as amounting to 1·96 per cent., just within the above limits. The patient taking, probably, very little food, this would account for the low proportion of albumen in the fluid under our consideration.

6th. There is equally a similarity between the proportion of fatty matters in chyle and in the peritoneal fluid. Tiedemann and Gmelin found 1·64 per cent. of fat in the chyle of horses, and Simon from 1·001 to 3·48 per cent., while, in the present case, the proportion was 1·99 per cent.

7th. Chyle probably contains sugar. Trommer believes he has detected its presence in the chyle of horses, by means of his own sugar-test, although Lehmann throws some doubt on the accuracy of this result (Phys. Chem., Vol. II., p. 286.) The presence of sugar in chyle, if admitted, while I believe it to be absent from common serous effusion, is another interesting connection between our peritoneal fluid and chyle.

From these remarks, I believe that the peritoneal fluid sent to me for analysis, was principally chyle, and I agree with Dr. Ormerod, whose impression is that by some means the trunk of some of the chyle-vessels had been perforated; he suggests that here was the source of the milkiness of the fluid in the peritoneum. The large amount of fat in the emulsion leads to the presumption that the fluid

was actually nothing but chyle; but the presence of the bile-acids, not found in pure chyle, appears to show that the emulsion consists of chyle, mixed with more or less of the common serous peritoneal effusion, which, according to Lehmann (Phys. Chem., Vol. II., p. 323), contains frequently, if not usually, the bile-acids.

Dr. W. Marcet, *3rd of December*, 1867.

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3. *Intussusception removed from the rectum.*

Mr. Holmes exhibited a large tumour which he had removed from the rectum, and which appeared to be formed of a portion of intussuscepted intestine. The patient, a man 37 years of age, was admitted into St. George's Hospital on the 9th of October, 1867. The following notes of the case were taken by Mr. Sims, then house-surgeon:—

He states that two years and a half since he was kicked on the perineum, and carried to the Westminster Hospital. He remained there for about a week, and was treated for retention of urine. Since then he has frequently had attacks of retention of urine, and micturition has been generally attended with a certain amount of straining and pain. On the second of October last, he was drunk; and in the night, whilst at the closet endeavouring to pass his water, had what he supposed to be a prolapsus of the bowel; about three inches of bowel protruded. He returned the mass with his finger, but lost a considerable quantity of blood at the time. He has since had great pain in the abdomen, more especially in the hypogastric region, and has vomited frequently; the stools have been fluid and bloody, and attended with tenesmus.

On admission he seemed to be suffering severely, and on being asked the cause complained of retention of urine. His aspect was pale and worn; he had had no sleep for several days, and had taken little or no food. After some difficulty and a warm bath a catheter was passed, and about a teacupful of urine drawn off. The abdomen was examined, and found somewhat distended, but resonant on percussion in the centre. Towards the iliac region, more or less hardness was perceptible to the touch, and a dull percussion-note was elicited. On examining the rectum a large mass was felt about three inches from the anus, apparently about the size of a duck's egg. The finger passed freely round it, and up to a sort of *cul de sac* above. No pedicle could be felt. There was a central depression in the tumour, somewhat resembling the os uteri to the touch. The case was thought to be one of intussusception. Ordinary diet. Spt. Vin. Gall., ℥ iij; aq. sodæ *ad lib.*; morphiæ acet. gr. ¼, sub cut. injiciend.

October 10*th.*—Has passed a restless night, vomiting at intervals. Had several stools; fluid faecal matter, with blood and mucus. Ate a hearty breakfast. Was examined by Messrs. Tatum and Holmes; put under the influence of chloroform, and an attempt was made to pass an O'Beirne's tube; the tube failed to pass, and an examination was made with the speculum. The parts were much congested, and a small bluish-black mass was pulled down; this was returned, and the patient was sent back to bed. Morphiæ acet. gr. ¼ h. s.

October 11*th.* Passed a better night; no sickness; several stools of a mucous character. Pulse 100. Opii gr. j ter. die. Omit. Sp. Vin. Gall. Vin. rubr. ℥vi. quotidie.

October 12*th.*—Symptoms much the same. Muco-purulent matter oozing from anus. Tongue coated; pulse 95.

October 13*th.*—Complains of thirst—Hst. ammoniæ cit., cum ammon. carb. gr. iij., 4tâ. q.q.h. Pil. cum. opii. gr. j., 4tâ. q.q.h.

October 15*th.*—Passed a bad night; vomited several times a brownish-looking fluid; tongue coated; feels very weak; takes all his food, and his evacuations are too frequent.

October 17*th.*—Tongue brown; pulse 96; retches slightly; countenance anxious. No pain in abdomen. Mutton chop and potatoes.

October 19*th.*—Tongue brown and dry; appears drowsy, as if under the influence of opium. Pupils natural. Motions more natural in appearance, and of firmer consistence. A piece of sloughy mucous membrane came away during the night; and has since felt more pain in abdomen. Opii. gr. j., bis die. Remained quiet, and free from pain several days, taking his food well.

October 26*th.*—Diarrhœa; mucous and bloody stools. No pain in abdomen. Pulv. Catechu comp. ℈ij. ter die.

October 29*th.*—Diarrhœa frequent; an evacuation about every half hour. Complains of pain in abdomen; tongue coated; pulse 100. Tinct. opii. m. xx. c. pulv., to be repeated if necessary.

October 30*th.*—Slept badly, had four rigors during the night, followed by profuse sweating. Semi-purulent discharge constant from rectum; bowel examined, and found in the same condition as on admission.

October 31*st.*—This evening, after severe straining, the mass protruded somewhat, and was secured to a bougie outside the rectum by a string passed through its centre.

November 1*st.*—Put under the influence of chloroform, and the mass pulled down as low as possible. It was found to have a very distinct

and narrow pedicle, round which a stout hemp-ligature was passed, and the mass cut off with the scissors. The pedicle was found to be nearly ulcerated through.

November 2nd.—Slept well, and seems generally better; ate a good breakfast, and has passed two stools of a more natural appearance than heretofore. Pulse 96, weak; tongue coated; no rigors.

November 4th.—Looks better; tongue moist and cleaning. Bowels have not acted since yesterday.

November 5th.—Is in a state of collapse, and has been so since yesterday evening. Mist. Sp. Vin. Gall. ℥vi.

November 6th.—Better to-day; partially conscious; pulse 104; motions natural; appetite bad.

November 7th.—Had a rigor during the night; slept badly, and complains of pain in abdomen. Pulse 120, weak.

November 9th.—Pulse very feeble, 120; tongue coated. Slept badly. Complains of sharp pain in abdomen; no distension. Mist. Sp. Vin. Gall. ℥x.

November 10th.—Much the same. Severe rigor, followed by sweating. Morph. acet. gr. ½, h. s.

November 12th.—Pulse 132, feeble; tongue brown and dry. The skin over the sacrum, which has been red for some days, has given way, and there is a large slough about the size of a cheese-plate. No signs of peritonitis. Appetite bad.

November 13th.—No pulse felt at wrist; tongue brown and dry. Semi-conscious. Passed a healthy motion this morning. Body generally cold and clammy. Died at 12.20 a.m.

Post-mortem examination, 1.30 p.m., November 14th.—Body emaciated.

Thorax. A large quantity of thin sero-purulent bile-stained fluid in the cavities of both pleuræ, more especially on the right side. Surface of right lung smeared with flocculent lymph of a yellowish colour. Both lungs were studded with a number of small pyæmic deposits surrounded by considerable congestion.

Heart. Left ventricle contracted and empty. Right ventricle dilated and full of discoloured clots. Muscular structure and valves natural.

Abdomen. Liver much congested; right lobe contained four or five pyæmic abscesses of a larger size than those in the lungs. Spleen pulpy and diffluent. Kidneys congested; tubes full. Large intestines adherent in two places to abdominal wall, in the right iliac fossa and at the splenic flexure of colon. In the iliac fossa, the cæcum and

vermiform appendix had disappeared, and the posterior wall of the gut was ulcerated through, so that the canal in this situation was formed partly of gut and partly of the abdominal parietes. The same thing had taken place at the splenic flexure. In the intestine about the situation of the ileo-cæcal valve was a polypoid mass between two and three inches in length and three fingers in breadth, covered by mucous membrane and continuous with it. It was made up of a dense fibro-muscular coat, inside which was loose areolar tissue and fat. Midway between the splenic flexure of the colon and the rectum was a patch of ulceration, which almost completely encircled the gut, and above this a smaller circular patch.

The mass which had been removed during life, and which was exhibited to the Society, was about four inches in length and somewhat cylindrical; its surface was covered with mucous membrane, except in one part where a piece of the mucous covering had come away, corresponding to the slough passed on the 19th of October. This exposed some muscular fibre and connective tissue. At the apex of the tumour was the depression felt during life, and likened in Mr. Sims's notes to the os uteri. A bougie passed up to this depression came out at the sloughy part of the surface, the tissue forming the tumour being so matted together that no distinct evidence of the presence of the three coats of the gut could be obtained. Still the form and general arrangement of the structure of the tumour left no doubt that it was a portion of invaginated intestine; and the circular ulcer which surrounded the circumference of the sigmoid fissure of the colon was obviously the mark of its attachment. The dragging of the tumour had brought this part of the gut within the reach of the finger. The stalk of the tumour having ulcerated through in a great part of its extent, the removal of the mass became possible and was no doubt indicated. In fact, the operation was followed by great relief, and had it not been for the unfortunate occurrence of pyæmia, there was every prospect of its success.

The other *post-mortem* appearances in the large intestine are less easy of explanation. The absence of the ileo-cæcal valve and of the neighbouring portion of the gut must have been due either to original malformation or to a previous attack of intussusception from which the patient had recovered in the usual way, viz., by ulceration removing the intussuscepted portion. The very distinct traces of ulceration in the neighbourhood rendered the latter supposition more probable, but there was no definite history of what must have been so serious and alarming an illness. Lastly, the small polypoid tumour found near

the situation of the ileo-cæcal valve was clearly not of the nature of intussusception, and was in all probability a simple polypus. Whether a similar tumour had existed nearer the anus and had occasioned the invagination which was the subject of this communication, it was impossible in the existing state of the parts to determine.

Mr. T. Holmes, 19*th of November*, 1867.

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4. *Microscopic specimen from an enlarged tonsil.*

The enlargement in this specimen, which was taken from a child, aged 6, depends on a veritable hypertrophy, the new tissue being made up of closely packed Malpighian capsules and differing from that of a normal tonsil of a child of the same age in having less tissue between the capsules, at the same time that the elements of the part are more distinctly defined. In it the vessels can be seen very clearly passing through the interior as well as upon the surface of the capsules. Mr. William J. Smith, 3*rd of December*, 1867.

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5. *Extensive cancer of the stomach. Sloughing of a portion of the cancerous growth and copious hæmorrhage. Remarkable absence of the usual symptoms of gastric cancer.*

John L., aged 45 years, a hatter, was admitted into the Middlesex Hospital, under my care, on the 28th of November, 1867. His mother had died at the age of 42, of what was believed to be disease of th eliver, with vomiting of blood. He had never felt strong since an attack of "gastric fever" four years before, and for more than a year he had been losing flesh. Six weeks before admission he became so weak that he was obliged to give up work, and during the same period he had vomited occasionally a little clear watery fluid, and he had now and then suffered severe pain in the left side of the abdomen.

On admission the patient was very thin, and presented a waxy, anæmic, cachectic aspect. He complained of pain in the left hypochondrium, coming on occasionally after food and lasting for about an hour, but not followed by any vomiting of food, although occasionally he brought up a little clear watery fluid. He was also, however, liable to very severe attacks of pain in the left hypochondrium and left loin, coming on suddenly, quite irrespectively of meals, and often so severe that he was obliged to rest upon his hands and knees to get relief.

An obscure tumour could be felt between the left ribs and the umbilicus —smooth, moveable, slightly tender, and apparently about the size of a kidney. The tongue was smooth and red, denuded of epithelium, and slightly fissured down the centre. There were small aphthæ on the gums. Nothing abnormal could be discovered in the heart, lungs, liver, or urine. The treatment consisted in bismuth, hydrocyanic acid, opium, effervescing draughts, etc.

During the five weeks that elapsed after the patient's admission he suffered much from the paroxysms of acute pain already referred to; but the pain seemed to be little influenced by what he ate or drank, and he never vomited his food, although at different times he took fish, meat, and porter. Now and then he brought up a little clear water. He became daily thinner and weaker, until on the 1st of January he weighed only 92¼ lbs., his weight a year before having been over 130 lbs. In the afternoon of the 2nd of January he vomited upwards of a pint of pure blood, what came first being quite black, but the subsequent portions being red; for five or six days afterwards the motions were black and tarry, and he suffered much from griping pains in the abdomen. The hæmorrhage from the stomach did not recur, but early on the 5th of January he was seized with acute pain and tenderness in the abdomen, which were only relieved by large doses of opium. After this he rapidly sank, and died early in the morning of the 14th of January.

Post-mortem examination.—The peritoneum contained a few ounces of turbid serum, and there were signs of recent peritonitis in the left hypochondrium. On slitting open the stomach, a nodulated tumour of soft cancer, about three inches in diameter, was found projecting from the anterior wall of the stomach, at the junction of the middle and pyloric third, into the interior. Between this and the œsophagus the coats of the stomach were greatly thickened and infiltrated with soft cancer, yielding everywhere much creamy juice on section. Within an inch of the œsophageal opening the mucous membrane and the cancerous mass, over a space three inches in diameter, were in a state of gangrene, hanging in loose shreds into the interior of the stomach. Both the œsophageal and pyloric openings were free from cancerous deposit. A mass of cancerous glands, as large as a man's fist, extended forwards from the spine, and was firmly adherent to the left end of the great curvature of the stomach. The lumbar and œsophageal glands were also much enlarged from cancerous matter, but there were no deposits in the lungs, liver, spleen, or kidneys.

Remarks.—There were several circumstances of interest in this case. 1. The immunity from vomiting of food, notwithstanding the great extent of the stomach involved in the cancer, which was accounted for by the cardiac and pyloric orifices being free. The pain, too, from which the patient suffered, was, for the most part, independent of ingestion of food, and was probably the result of pressure of the enlarged cancerous glands upon the abdominal nerves. 2. The sloughing of a portion of the cancerous growths in the stomach. In a former volume of the *Pathological Transactions* (XIV., p. 155), I have recorded a case where a similar cancerous growth in the stomach sloughed, and where the gangrene extended through the whole coats of the stomach, causing perforation and fatal peritonitis. In that case, too, the cardiac and pyloric orifices were exempt from disease, and there was an absence of the usual symptoms of cancer of the stomach. 3. The copious hæmorrhage from the stomach and bowels, an occurrence far more common in simple ulcer of the stomach or duodenum than in cancer, and which was due to the sloughing in the stomach laying open a vessel of some size.

Dr. Murchison, 18*th of February*, 1868.

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6. *Ulcer of the œsophagus perforating the trachea and believed to be non-cancerous.*

J. E. F., a wine-cooper, aged 52, applied for treatment as an out-patient, at the Hospital for Diseases of the Throat, on the 24th of October, 1867, on account of dysphagia. The patient, a small, thin man, said that for two months he had experienced increasing difficulty and also great pain in swallowing. Liquids could be taken more easily than solids. He had a frequent loose cough, with abundant expectoration, and had occasionally brought up a little blood. The larynx was seen with the laryngoscope to be slightly congested. On passing a No. 12 bougie down the œsophagus, a slight difficulty was felt about three inches below the cricoid cartilage, but the instrument could be passed beyond this point of stricture. There was nothing remarkable about his family history, except that two of his brothers had died of phthisis. He was ordered milk-diet, and to suck ice continually. He improved very much under this treatment, and at the end of three weeks was able to take liquids, semi-liquids, and even meat, without difficulty or pain. A full-sized bougie was passed

without any hitch. On the 21st of November he was discharged at his own request. At this time he said he could swallow anything, but he was cautioned to be very careful in respect to his diet. Early in December he suddenly became worse, and was soon unable to swallow anything. He was not seen by me after his discharge from the hospital. He became gradually worse, and died on the 27th of December, 1867.

At the *post-mortem* examination the lungs were found to be extensively hepatized, and there were evident signs of recent bronchopneumonia. An irregular ulcerated thickening of the parietes of the œsophagus was found extending from about an inch below the cricoid cartilage downwards about an inch and a half, and involving the entire circumference of the tube. At about its centre the ulcer had perforated the trachea, and formed an irregular oval opening about six-eighths of an inch in length and half an inch in breadth. In the posterior wall of the trachea a corresponding ulcerated opening was found in the median line, extending from the ninth to the fourteenth ring inclusive. The edges were sharp and not thickened, but the mucous membrane of the trachea was superficially ulcerated for a few lines around the opening. A band of congested mucous membrane, passing transversely across the opening, divided the perforation unequally, so as to make two orifices. Drawings taken immediately after death were exhibited with this specimen, to show the appearance of the œsophagus and trachea.

Dr. Morell Mackenzie, 18*th of February*, 1868.

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7. *Case of umbilical hernia, which proved fatal after operation for strangulation, by ulceration of the gut and peritoneal extravasation.*

The specimen consisted of the sac of an umbilical hernia, with the external parts around the navel, and a portion of the gut above and below the point of ulceration which was adherent all round to the neck of the sac by recent lymph. The intestine was the ileum thirty-two inches above its termination, with a knuckle about the size of a cherry slightly protruding through an opening in the abdominal wall, at the site of the navel. The part below the protrusion was the jejunal portion of the intestine. In the anterior wall of this portion, close to the adherent part, a small hole, about the size of a hemp-seed, was seen, through which the contents had become extra-

vasated. The gut was opened behind, showing the upper or jejunal portion to have the walls distended, thickened, hypertrophied, and inflamed, with much contraction of its calibre at the point which was adherent to the navel, only just allowing of the passage of a goose-quill. The intestine below this point was thin, pale, and flaccid. Various spots of gangrene were apparent near the constricted portion. Some brown grumous matter was found in the intestine. A similar matter had become effused into the peritoneal cavity, setting up fatal peritonitis.

The case was as follows:—

M. T., aged 54, a very fat woman, had borne one child only, thirty years before. Four years ago she observed a protrusion at the navel, for which no truss was worn until two years ago. The use of the truss had been occasionally intermitted in consequence of great tenderness in the tumour, and it was at length altogether left off in December, 1867. After doing so an occasional diarrhœa, alternating with constipation, occurred. On the 21st of that month she was seen and treated for severe pain in the abdomen, constant sickness, and constipation. Pulse 100, and tongue furred and brown. Urine scanty and loaded with lithates. The vomit was brown and bilious, but not fæcal. An enema was returned without fæces. Leeches were applied with some relief. On the 24th, she passed, by the aid of an enema, a copious stool of solid, flattened, light clay-coloured fæces. On the 26th, there was less sickness, but more swelling and pain in and around the umbilical tumour. On the 27th, an operation was performed under ether spray. An incision, two inches and a half long, was made at the side of the swelling, when a careful dissection revealed a tense, fluctuating sac, from which, on being opened, about two ounces of glairy and very fetid pus escaped. A small piece of intestine could then be seen protruding through the navel. Its contents could be pressed out, but it was irreducible in consequence of firm adhesions all round. Further interference being deemed unadvisable, the wound was dressed with carbolic acid lotion. Great relief was felt from the operation. On the following day the pain had almost gone; there was no sickness, and the patienthad, the day afterwards, another copious stool after an injection. On the 29th, sickness recurred twice, and an occasional discharge of a reddish-brown fluid, of an extremely offensive odour and with much flatus, came on. A small perforation was then observed in the upper part of the sac, through which a probe could be passsed apparently into the bowel. She continued to improve, with diminished, though occasional, sickness, and a tolerably good appetitte, until the

1st of January, 1868, when a small piece of undigested orange came out at the opening. She afterwards passed a healthy-looking stool. In the afternoon of the same day she was seized with a violent pain in the abdomen, faintness and extreme collapse, became unconscious during the night, and died on the morning of the 3rd of January.

Mr. JOHN WOOD *for* Mr. HOARE, *3rd of March*, 1868.

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8. *Extensive glandular disease of the rectum, associated with tubercular ulceration of the intestine and recent tubercles in the lungs.*

George S., aged 57, was admitted into the Middlesex Hospital, in March, 1868, under the care of Mr. Nunn, apparently suffering from cancer of the rectum.

No cancer in his family. What seems to have been an epitheliomatous growth was cut from the scrotum nine years before. He had been troubled with persistent diarrhœa for eighteen months—almost a constant passage of liquid fæces; at times, he had suffered from hæmorrhage, and for the last three months from the most intense pain, greatly aggravated by attempts to defæcate. The man was almost in a dying state when taken into the hospital; a large ulcerated mass was felt three inches up the rectum, but careful examination could not be ventured upon, and the patient sank in a few days.

Post-mortem examination.—Finely made, tall body, much emaciated. Thick grey beard.

No pleural adhesions, but some recent lymph smeared over base of right lung. Both lungs emphysematous, so as to overlap the heart unusually, and much pigmented. Both bases more or less solidified by inflammatory changes, and both apices studded with small grey granulations of tubercle. In the substance of the left apex, some lines from the pleural surface, a mass of yellow tubercle, larger than a walnut, with surrounding pigmentation and fibroid induration traversing it. Some small tubercular cavities in right apex. Liver fatty. Studding the small intestine were numerous raised nodules, the size of split peas, having a purple hue through the serous coat; some of them were ulcerated on their inner surface; they appeared to be the result of tubercular changes in the solitary glands. No large tubercular ulcers were found. The rest of the viscera were healthy. The lower bowel was normal until about seven inches from the anus where the mucous lining was interrupted by extensive ulceration, about the edges of which the

mucous membrane had a curious worm-eaten appearance, while the prominent margin was shaggy, with red lobulated growths, bearing beautiful villous processes which waved over a large area; they were two inches in length, reached completely round the gut, and were composed of colloid-looking material, irregularly covered with ragged shreds of remaining mucous membrane. This part of the intestine was generally from four to seven lines in thickness, being much thicker below, where, indeed, the canal seemed to have been occluded, a passage having been made by the fæces through the surrounding cellular tissue, which opened into the rectum again, three inches from the anus. Above the large mass was a smaller, probably a more recent, ulcer, the size of a pea-pod, around one part of the raised edges of which the mucous membrane was undermined and perforated in many spots. For the rest, the ulcer had sharp raised margins with no notably enlarged villi. The three inches of rectum next to the anus appeared normal. There was no contamination of the lymphatic glands.

This specimen was brought before the notice of the Society as a recent preparation on the day of the *post-mortem* examination, and from the hurried microscopic observations made, it was pronounced to be a case of epithelioma, associated with recent tubercle elsewhere, and exhibited as such. Further and more careful examination, however, led to a different judgment on the real nature of the bowel-affection, as the report of the Committee shows. The title of the preparation is therefore altered accordingly.

The specimen is now in the Museum of the Middlesex Hospital.

Mr. Henry Arnott, 17*th of March*, 1868.

Report by the Committee on Morbid Growths on Mr. Arnott's specimen of epithelial growths in the rectum.—The growth occupies the anterior portion of the wall of the second part of the rectum and almost completely surrounds the bowel, leaving only one-fifth free. It measures rather less than four inches in a longitudinal direction, has an irregular outline, and presents marked differences in the character of its surface in different parts. It appears to be completely limited to the inner portion of the wall of the gut, and does not implicate any of the surrounding parts. In some portions especially near the circumference of the growth, the surface is smooth and the substance firm and resisting, resembling hypertrophied mucous membrane; whilst in others the surface is rough and almost villous in character, ulceration having apparently taken place here; in others again a colloid appearance is

presented: semasses of jelly-like material may be expelled by gentle pressure from the meshes of a fibrous reticulum. On section it is found that the new growth has only invaded the mucous membrane, even the submucous connective tissue appearing unaffected. The thickness of the mass varies much in different parts, from a very slight excess above the normal to a thickness of half an inch or more. Opaque masses are found in the deeper layers in some parts, varying in size from that of a millet-seed to that of a pea: one mass presenting similar characters is as large as an ordinary filbert.

Microscopical examination.—The specimen had been preserved for some time in a rather too dilute chemical solution before the examination was commenced by the Committee, and consequently the superficial epithelium had become loosened and separated; from sections, however, which Mr. Arnott had prepared from the recent specimen, it appeared that the surface was covered by a columnar epithelium, which existed in parts in very numerous layers, and assumed almost the appearance of warty or villous projections; the exact relation of these villous processes to the different portions of the growth could not, for the reason given, be satisfactorily determined. A section carried vertically through the thickened mucous membrane, at the junction of one of the colloid masses with the firmer surrounding part, exhibited the structure represented in Plate III., figs. 5 and 6. The firmer part consists of a well-defined fibrous stroma (Fig. 5), in which are imbedded closely packed lobulated masses of cells and nuclei. The loculi existing between the bands of the fibrous stroma are completely filled by these masses, which may be easily enucleated. These spaces present various forms, round, oval, elongated, or irregular; this variety, however, appears to be due to the chance direction in which they have been divided by the knife. The colloid portion of the rectum presents a somewhat different arrangement; the fibrous bands are here much thinner, and some are more condensed, and the loculi are greatly increased in size. In the centre of these spaces is seen an irregular mass of cells and nuclei less closely aggregated together than in the firmer parts, the remainder and often the greater part of the space being occupied by a gelatinous material, which is translucent or dimly granular, but structureless. Under a high power the stroma is seen to consist of delicate fibres, amongst which a few oval and more numerous filiform nuclei may be seen. In some parts the fibres are easily separated from one another, whilst in others they are compressed into firm bands. The cells may be easily isolated in the colloid parts, and

present the characters of glandular epithelium cells. They have an irregular form, rounded or polygonal (Fig. 6), an indistinct cell-wall, granular contents, and a prominent nucleus; they measure from $\frac{1}{3500}$ to $\frac{1}{1750}$ of an inch in diameter. The nuclei are found in considerable numbers in some parts, and they are probably the remains of cells which have undergone destructive degeneration. The whitish masses which are found in the deeper layers, consist of closely packed cells, which are, however, easily separated by the application of a gentle force. They present the same characters as those above described.

Remarks.—The growth undoubtedly belongs to the adenoid group, and it appears to be the result of an active hyperplasia of the tubular glands of the rectum. Its progress appears to be somewhat as follows: first, a great increase in the epithelium of the gland tubules takes place, resulting in complete occlusion of the canal; secondly, there is distension of the tubule through the gradual accumulation of products of secretion and the degeneration of the cell-structures, leading to the production of loculi filled with gelatinous material. The fibrous stroma gradually becomes attenuated and converted into slender bands in consequence of the outward pressure exerted by these accumulations. The growth presents no evidence of any heterologous formation, and both structurally and clinically appears to have been of a purely local character. 21*st of April*, 1868.

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9. *Case in which death was caused by a small splinter of bone perforating the œsophagus and aorta.*

On Tuesday, the 24th of March, 1868, T. D., a trooper in the 2nd Life Guards, consulted Dr. Spry. He was a handsome strongly built man, 22 years of age, six feet two inches in height, and his appearance indicated the most robust health. He had only been in the regiment six months, during which time he had never been on the sick list. He complained of indigestion and oppression at his chest, the result, he said, of having eaten his dinner too fast on the previous Saturday, and swallowed a piece of gristle, which "seemed to stick half-way down." He added, "I feel, sir, quite well in myself, and fit to do all my duty except riding, for the trotting hurts me." His tongue was clean, skin cool, pulse regular, but the bowels were confined. He was excused riding, and a purgative draught administered, and he was ordered to attend

hospital the next day. The next morning (the 25th of March) he said that the bowels had been freely opened, but that the indigestion was no better, neither had the oppression at the chest become less; and he then observed, "If I could only be well sick, I believe I should be all right, for the piece of gristle still seems to remain on my chest." His pulse was about 80, full and regular; tongue slightly furred. He was ordered an emetic immediately, and to remain in the hospital until its effect had fully passed off, and then to have a sedative draught of opium, hyoscyamus, and ether. He was excused all duties for the remainder of the day, and told to attend hospital again in the evening, when he stated that he had vomited freely after the emetic, that the indigestion was about the same, but that the sedative draught had afforded him great relief for some time after he had taken it. It was therefore repeated at bed-time. On the following morning there was a marked change for the worse in his appearance. He was looking very ill, and he stated that he had had a very bad night, and had suffered very much from pain in the chest. His countenance was pale and anxious, tongue much coated, pulse 90, rather full and jerking, and communicating a peculiar thrill to the finger; urine normal, and his appetite quite gone. After a careful examination, the conclusion was come to that he was suffering from some severe and unusual form of dyspepsia, but still the pain seemed so acute, and the expression of his countenance so anxious, that it was deemed wiser to return his disease as "under observation." He was at once admitted into hospital, ordered to bed, and a sedative mixture given every two hours. He was frequently visited during the day, and in the afternoon he said the pain was spreading all over his chest, and went right through his back. At dinner-time he had some strong beef-tea, but could not swallow much on account of the pain it occasioned, but he afterwards drank a little cold milk without inconvenience. At a quarter-past seven p.m. he had just finished passing water, and placed the "chamber" under the bed, and was talking to another patient in the ward about his health, when, without a second's warning, he vomited quarts of arterial blood right across the ward, and fell back upon his pillow dead.

At nine a.m., the following morning, a *post-mortem* examination was made by Dr. Spry, assisted by Drs. Cay and Farquharson. At about the centre of the middle third of the œsophagus there appeared a round blackish ulcerated mass, the size of a threepenny-piece, and from its centre arose a sharp spicula of bone, about an eighth of an inch in length. The morsel of bone was followed through as it were a tunnel

of areolar tissue in an ulcerative state and traced to the aorta, in the ascending portion of which, about an inch and a quarter below the origin of the arteria innominata, a similar dark-coloured patch of ulceration was detected enclosing the other end of the bone. Across the ulcer a rent had taken place, about one-fifth of an inch in length. All the other organs of the body were healthy, but the stomach contained several pints of loosely coagulated blood. The sharp piece of bone had no doubt been unknowingly swallowed, imbedded in the piece of meat or gristle, to the presence of which he attributed the first attack of "indigestion" five days previously. This, piercing the œsophagus, had ulcerated its way into the aorta, and by the sudden exertion of stooping to replace the "chamber" under his bed, the rent through the ulcerated and softened coats of the aorta may have taken place, causing the fatal hæmorrhage. No similar case to this appears in the *Transactions* of the Society, and it is probable that, if not unique, it forms one of a very small number in the records of the profession.

Dr. Farquharson *for* Dr. Frederick Spry, *7th of April*, 1868.

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10. *Cancer of the sigmoid flexure of the colon causing obstruction of the bowels; cancer in the liver.*

In March, 1868, a married woman, aged 46, was admitted into Guy's Hospital, under my care. She was in a state of great prostration, and had been labouring under the existing attack of illness from seventeen to eighteen days. The following history was obtained from her friends:—

During the preceding twenty-three years she had never passed a twelvemonth without being under medical treatment for two or three months at a time. Her symptoms had been ascribed to derangement of the digestive organs, and had been principally pain in the epigastrium after food, accompanied by nausea and vomiting. She had never suffered from prolonged constipation, or from anything like the present illness, until January last, when the bowels were not relieved for about a week. Aperient pills were taken on three successive days, and at the same time castor oil. Enemata were used on the fourth day, but were retained only a few minutes, although they were not rejected by the side of the tube. After the injected water had passed, several small scybala were found in it. During the subsequent part of that day the bowels were moved five or six times, and on each occasion

the quantity of fæcal matter passed increased, and its consistency became more fluid. From this time she seemed as well as usual, except constant pain close to the umbilicus. The bowels were daily relieved, and no peculiarity of the fæces was noticed. We now pass to the present illness.

On the 22nd of February, her bowels were relieved, but never since then, seventeen days, have fæces passed. Five days after the above date she took two aperient pills, and repeated them next day. On the following day, a medical man ordered an enema as before, and she took some pills. On this day, the seventh from the commencement of the illness, all nourishment taken, solid or fluid, was vomited. This distressing symptom has continued since that day. The pain above the umbilicus still remained, and was not relieved by any local treatment. It was accompanied by intermittent attacks of colic, extending to the other regions of the abdomen. Enemata composed of various substances were employed; the first one was ejected with a few scybala, and another was slightly tinged with fæces. Only a short pipe was used. The abdomen became daily more and more tumid, and the most distressing sensation was that of thirst. The quantity of urine passed had been less than usual, and for two or three days it was of a dark mahogany colour. Micturition was painless. Her egs had never been swollen, nor had she felt pain down the thighs. She never had an attack of jaundice. The catamenia were regular, and the last period occurred during the present illness. The fæces were never observed to be tinged with blood.

The circulation of the patient, on admission, was extremely feeble; the pulse 120. Her facial expression characteristic, the extremities cold and blue. The tongue was much coated. There was not great emaciation. The abdomen was distended, and the respiration somewhat affected by the forced up diaphragm. The coils of the intestine were traceable, although not so well marked as when the abdominal walls are much attenuated. By careful manipulation I thought I felt both the ascending and descending colon much distended, and on percussion extreme dulness was very marked over their course. But when the patient was gently turned on to one side, I was unable to satisfy myself that either one or other was much distended, for that which I took to be a full colon as the patient lay on her back seemed to fall away from the loin and leave an empty space, just as distended small intestine might do in consequence of its great mobility. Having asked Dr. Habershon to examine the patient, he

detected slight irregularities in the region of the liver; and elevations which might be taken for hard tubera in that organ were certainly very perceptible through the abdominal walls. An examination of the rectum was made with the finger without detecting any obstruction in that bowel. A long flexible enema-tube was used, the end of which appeared to impinge against some obstruction to its further passage at about eight inches from the anus. All fluid injected through it returned by its sides after three or four ounces had been thrown in. The operation of colotomy was of course suggested, but the condition of the patient precluded its immediate performance. Small injections of nutriment and stimuli were administered per anum. In spite, however, of all the care taken of the patient, she gradually sank and died within twelve hours of her admission.

Post-mortem examination.—This was made by Dr. Moxon, and the following account of it is from his notes:—

Under the pons Varolii, at its middle, was a pellucid, rounded, nodular growth of gelatinous consistency, about the size of half a hazel-nut. It was beneath the arachnoid, to the left of the basilar artery, and was composed of large cells with clear contents, each cell having a nucleus and nucleolus. There was slight adhesion between the apex of the right lung and the pleura; also in the same part of this lung there were traces of old phthisis with old pigment around them. No carcinoma in either lung. The heart weighed nine ounces. Its right side was filled with tough, fibrous clot. In the left auricle there was a clot. The stomach showed a permanent hour-glass constriction, which was produced by a band of adhesion passing from the under surface of the liver. The duodenum showed a small cancerous nodule in the sub-mucous connective tissue, half an inch in diameter, and situated about three-quarters of an inch above and behind the opening of the bile-duct. The intestinal portion of the bile-duct was thickened, the coats of the whole alimentary canal as far as the rectum were much thickened, the muscular fibres being very thick, particularly the longitudinal bands of the colon. Throughout the intestines there was no disease until the lowest part of the sigmoid flexure of the colon, where a contracted hard portion, one inch and a half broad, was found. A full-sized catheter would pass through the constriction, and the liquid fæces with which the colon was distended came through slowly after the catheter. A vertical section being made along the bowel, a growth of one inch and a half thick was seen attached to and overlapping the mucous membrane. This tissue was easily scraped away, and part of it was dead. Neither

the neighbouring parts nor the lymphatic glands were affected. The liver contained numerous tubera of carcinoma, the one on its surface, felt during life, being about three-quarters of an inch in diameter; it weighed ninety ounces. The gall-bladder was distended with one ounce and a half of viscid bile. Kidneys, ten ounces; small fibromata in pyramids. Mr. Birkett, 21*st of April*, 1868.

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11. *Cancer of the œsophagus, with fistulous opening into the trachea and cancer (tubercle?) of the apex of the right lung.*

This case was chiefly interesting from the fact that during life there were all the physical signs of tubercular deposit in the upper part of the right lung, in conjunction with the symptoms of stricture of the œsophagus, or of the cardiac orifice of the stomach. It is also to be noted that there was a cough with emaciation, long before there was any difficulty in swallowing. The *post-mortem* examination showed extensive cancerous ulceration of the œsophagus, and a deposit in the lung, which, under ordinary circumstances, would unquestionably have been put down to tubercle, although the intervening glandular enlargement seemed to point to its being of the same nature as the deposit in the œsophagus. It was for this reason that, in common with Dr. Bristowe and others who saw the specimens when fresh, I was at first led to regard the disease in the lung as cancerous; but the recent experiments on the artificial production of tubercle show how it might have been due to a sort of *chronic pyæmia*, and been after all more nearly allied to tubercle than cancer.

The patient was a stone-mason, aged 63, who was admitted into the Middlesex Hospital, under my care, on the 13th of September, 1866. He had enjoyed good health until Christmas, 1865, when he began to suffer from a persistent cough. For three months he had been rapidly emaciating, and about a month before admission he first lost his voice, and soon after experienced a difficulty in swallowing. He never had hæmoptysis or night-sweats.

On admission, the patient was extremely feeble and emaciated. His voice was husky, and he could only speak in a whisper. He brought up all his food, even liquids, almost before they were completely swallowed. The uvula and back of the fauces were red and swollen, but not ulcerated. Below the right clavicle, for several inches down, there was marked flattening, with deficient expansion, dulness on per-

cussion, blowing breathing, and coarse crepitation during inspiration. There were similar signs in the right supra-spinous fossa. The pulse was 72, and feeble; there was no abnormal murmur with the heart. The abdomen was retracted; the hepatic dulness was diminished; and the bowels were sometimes not open for a week at a time.

The treatment consisted chiefly in the administration of enemata of beef-tea and brandy. On one occasion, a pint of beef-tea was introduced by Mr. Moore into the stomach by an elastic catheter passed down into the œsophagus, but the operation was attended with so much difficulty and entailed so great exhaustion, that it was not repeated. For the same reason, the patient could not be subjected to examination with the laryngoscope. He died by exhaustion on the 26th of September.

Post-mortem examination.—The coats of the œsophagus, from its commencement at the lower end of the pharynx down to the stomach, were infiltrated with cancerous deposit, varying in thickness from one half to one-sixth of an inch, and yielding on section abundance of milky juice containing characteristic cancer-cells. Immediately above the cardia the œsophagus was surrounded by a tumour, of the size of a small orange, composed of similar cancerous matter. The mucous membrane for the first four inches above the cardia was thickened and granular, and above this, as far as the pharynx, it was extensively ulcerated, while at one place a fistulous opening, large enough to admit a goose-quill, passed from the œsophagus into the lower end of the trachea, through a mass of softened cancerous glands. The œsophageal, tracheal, and bronchial glands were much enlarged from cancerous deposit. Both lungs, but particularly the right one, were firmly adherent at the apex. In the upper part of the right lung was a mass of consolidated tissue, of the size of a large orange, consisting of puckered fibroid tissue, having infiltrated through it a soft cheesy material exactly like soft tubercle to the naked eye, and even under the microscope consisting only of granules and nuclear bodies and presenting no cells like those in the œsophagus. With the diseased œsophagus, however, this morbid mass was almost connected by continuity through the enlarged bronchial glands, which were much larger on the right side than on the left. The right lung weighed twenty-seven ounces; the left eighteen ounces and a half; both were congested and œdematous; neither contained anything like grey miliary tubercles. There was no ulceration, œdema, or submucous deposit in the rima glottidis or larynx. The lower part of the trachea was very red, with granular

submucous deposit, but was not ulcerated, except where the fistula entered from the œsophagus. The heart weighed eight ounces and a half; its valves were healthy. The liver was in a state of simple atrophy, and weighed forty-two ounces. The spleen was shrivelled, and weighed three ounces and a half. The remaining organs were healthy. Dr. Murchison, *5th of May*, 1868.

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12. *Perforating ulcer of the ileum communicating through a fæcal abscess with the cæcum, apparently the result of enteric fever.*

Although the history and symptoms in the following case did not point to enteric fever, the appearance of the cicatrizing ulcers met with in the lower end of the ileum left no doubt that this was the origin of the patient's fatal illness. One of the ulcers in the ileum appears to have proceeded to perforation and the formation of a circumscribed fæcal abscess, the symptoms during this time being urgent vomiting, sometimes of fæcal matter, and constipation. After a time the abscess opened into the cæcum; the vomiting abated and ceased to be fæcal, while uncontrollable diarrhœa was substituted for the constipation. In a former volume of the *Transactions* (Vol. XIII., p. 65), I have recorded a case which in many respects was very similar to this, where an attack of enteric fever was followed by a perforating ulcer of the sigmoid flexure of the colon, with stercoraceous vomiting and diarrhœa.

Agnes K., aged 23, was admitted into the Middlesex Hospital, under my care, on the 8th of July, 1867. She had been living with a man as his mistress, and for two years had been in the habit of drinking about a pint of brandy a day. She had been ill for about eleven weeks, her illness having commenced apparently somewhat suddenly, on the 19th of April, with retching, and her chief symptoms up to the time of admission having been constant vomiting after food or drinks, loss of appetite, and emaciation. For the first three weeks also there had been considerable pain in the abdomen. The bowels had been constipated throughout.

On admission, she was moderately emaciated. The pulse was 64; the skin cool; the tongue moist, with a slight white fur, and red at the edges; the abdomen was not distended or tender; and the bowels were open only once in two or three days. But the patient's chief complaint was of vomiting coming on always about half an hour after meals. She stated that she brought up almost everything she took, but that there

was no pain between deglutition and vomiting. She had a slight gonorrhœal discharge.

Ice, bismuth and hydrocyanic acid, lime-water, oxalate of cerium, creasote, naphtha, counter-iritation to the epigastrium, purgative pills, and enemata all failed to relieve the retching. On the 17th of July, after the bowels had been for several days confined, she vomited about a pint of matter like pea-soup, of an unmistakeable fæcal odour, and she stated that about a week before admission she had vomited a similar matter. This fæcal vomiting recurred several times during the first week of August, although the bowels were pretty freely open; the patient became much weaker, while her pulse rose to 120; her tongue became clean and very red, and the abdomen became distended and tympanitic, although it was not tender. After this the vomiting was never decidedly fæcal, but on the 9th of August, aphthous crusts made their appearance inside the mouth and on the tongue; and on the 28th of August, bilious diarrhœa set in, which, notwithstanding acetate of lead and opium, opiate suppositories and enemata, etc., continued until death occurred by exhaustion on the 14th of September.

Post-mortem examination.—There were a few old adhesions between the diaphragm and the liver and spleen. The mucous membrane of the stomach was healthy. The small intestines were enormously distended with gas and fluid fæces of an ochrey yellow colour. The lower end of the ileum, the cæcum, and the ascending colon were firmly adherent to the fundus uteri and to one another, and on slitting open the bowels there was found to be a perforation in the cæcum large enough to admit a full-sized catheter. This opening passed into a fæcal abscess of about the size of a hen's egg, situated behind the uterus, and containing numerous grape-stones, and communicating with a fistulous opening in the ileum nearly two feet above the valve and about four lines in diameter. There was no thickening or deposit around the opening in either portion of the bowel, but in the lower foot of the ileum there were about half a dozen superficial ulcers, the largest measuring ten lines by three, and each surrounded by a loose fringe of mucous membrane, but without any thickening or deposit at their margin or base. The mesenteric glands were large and indurated. The interior of the uterus was healthy, but there was a small abscess in the right ovary. The liver was very fatty, and weighed seventy-two ounces. The spleen and kidneys were healthy. The heart and lungs were small, the heart weighing six ounces and a quarter, the left lung seven ounces and a quarter, and the right twelve ounces and three-quarters. Dr. Murchison, *5th of May*, 1868.

13. *Two date-stones passed from intestine, which was incarcerated in the sac of an inguinal hernia.*

The child from whom these stones were obtained was a year old, and attended as an out-patient at the Children's Hospital. It was the subject of extreme epispadias, the entire penis and pubes being cleft, though the mucous membrane of the bladder was not exposed. As is usual in such cases, the child suffered from double inguinal hernia.

On the 15th of March this year, the child was said to have swallowed two date-stones. Fifteen days afterwards the mother brought it to the hospital, with the inguinal hernia on the right side enlarged, much inflamed, and very painful. The rupture was said to have been twice reduced with difficulty at another hospital; the bowel had, however, again descended. The child was ill and feverish, but did not seem to be suffering from strangulated intestine. A poultice was applied; suppuration took place within the sac, and at the end of a fortnight (one month after they were swallowed), the two date-stones were passed, which are now before the Society. At the present time there is still some slight discharge from a fistulous opening at the lowest part of the hernia. Mr. Thomas Smith, *5th of May*, 1868.

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14. *Colloid cancer of œsophagus, stomach, lungs, and adjoining lymphatic glands.*

T. R., a corn-porter, 45 years of age, was admitted under my care on the 18th of February, 1868. His statement was to the effect that he had been ailing for two months only; that during the whole of this time he had suffered pain at the lower part of the chest in the act of swallowing; and that during the first month only he had had sickness, with pain in the stomach during the act of vomiting. He had been subject to cough, and had had a slight cough for two or three months. His appetite had all along been fair; his bowels somewhat constipated.

On admission he appeared to be a not unhealthy man; his tongue was a little furred; his appetite moderate; but the swallowing of solid food caused pain, referable to the lower part of the œsophagus, and continuing for some little time after swallowing. The food seemed (he said) to lodge at the seat of pain. There was neither sickness nor nausea. Chest resonant; breath-sounds feeble, but healthy; cough slight; expectoration scanty, somewhat transparent and glutinous;

heart-sounds, normal. No fulness or tenderness of belly, or evidence of tumour there; legs not œdematous. For a month there was little material change in his symptoms. The pain at times seemed to be relieved by opium. He complained at times of fulness at the epigastrium, and of pain in the corresponding part of the back to the left of the spine. He complained also of giddiness, and of sleeping badly.

24th of March. During the last few days his cough has increased and become very troublesome, and he has expectorated a large quantity of semi-transparent mucus. He has also been very sick, and had in vomiting much pain across the scrobiculus and along the œsophagus. The chest is resonant on percussion; but there is much rhonchus over the whole of the right lung, with a little increase of vocal fremitus at the base behind, and some friction near the edge of the false ribs in front. The scrobiculus is hard and resisting, but no tumour can be felt.

During the next few days the expectoration became gradually muco-purulent, and the auscultatory indications of bronchitis general. From this time all treatment failed to relieve him; his cough continued to harass him; his expectoration was abundant, tenacious, and muco-purulent; his breath became short, and he suffered from extreme dyspnœa, so that he had constantly to sit up during the day, and to sleep propped up by pillows at night. But although slight friction remained for a week or two, audible at the base of the right lung in front, and rhonchus and subcrepitation were permanently to be heard over both lungs, no distinct evidences of consolidation manifested themselves. The pain and difficulty in swallowing remained much as they had been all along. His appetite got very bad; he became rapidly and extremely emaciated, and correspondingly weak; latterly he was a little delirious at night, and he vomited constantly. He died at length, completely worn out, on the 23rd of April. Even to the last there was no discoverable tumour in the epigastric region.

Post-mortem examination.—The body was much emaciated.

Chest. Pericardium and heart healthy. The lungs were partly adherent to the thoracic parietes. They were large and heavy, sparely crepitant, but nowhere presenting continuous tracts of consolidation. The surface of each had a very remarkable appearance: it presented, irregularly distributed over it, the ramifications of what were apparently lymphatic vessels. These were opaque white threads, situated beneath the pleura, occupying, in fact, the interlobular spaces, but not limited to them; uniting with one another so as to form a more

or less irregular network, and here and there breaking up into a kind of brush. The threads varied in thickness, but seemed flattened more or less in conformity with the surface of the lung. In many places the white material in these threads appeared to have grown out from them laterally, insinuating itself as a thin lamina between the lung-surface and the visceral layer of the pleura, and thus forming comparatively broad bands with irregular sinuous outlines; and here and there the network was interrupted by comparatively large irregular patches of disease, which had probably originated in the same way. A few of the ramifications were remarkably opaque and yellow, and were found to be distinct channels filled with creamy fluid. That the network above described was not a network of diseased blood-vessels was evident from the fact (among others) that the smaller blood-vessels on the surface were for the most part loaded with blood, and were very distinct, and that those that were thus distinct were in no case affected.*

On making sections of the lungs, it was found that a growth somewhat similar to that mapping out their surface surrounded the bronchi and vessels at the roots, and was prolonged upon the ramifications of these throughout the whole substance of the lungs; so that on the sectional surface, wherever made, the bronchial tubes (even the smallest) with their attendant vessels, were imbedded in a greater or less abundance of it. In many places too (I fancy chiefly in connection with the ultimate ramifications), the growth appeared to have invaded and incorporated into itself, as it were, small portions of the lung-tissue. The sub-pleural growth had also in some places similarly invaded the subjacent lung-structure. There were no defined tumours in either lung. The infiltrating material above described yielded no creamy juice, presented in many parts a peculiar translucent appearance, and (even where not distinctly transparent) a less degree of opacity and whiteness than belongs usually to encephaloid cancer. It was soft, and somewhat granular in texture, and hence it was difficult to make microscopic sections of it. It yielded in many places, on pressure, small drops of transparent glutinous fluid. In some parts of both lungs there were opaque whitish patches, which furnished opaque fluid on pressure; but these seemed to be due to lobular pneumonia rather than to the prevailing disease. The arteries and

* A similar appearance of the lungs is described by Dr. H. Weber in Vol. XVII. of the *Transactions*, p. 153, and Plate VI.—Ed.

veins running along with the bronchial tubes were unobstructed, although their parietes were more or less incorporated in the material surrounding them. The air-passages also were healthy as to their mucous surface and undiminished in calibre, with the exception of the bronchi and lower part of the trachea, the mucous membrane of which was studded pretty thickly with small opaque white points, projecting above the surface. The bronchial tubes were somewhat congested, and contained a large quantity of muco-purulent fluid.

The bronchial glands, some of those along the posterior aspect of the trachea, and many along every part of the œsophagus, were converted into tumours from the size of a large filbert downwards. There was a mass of glands in the bifurcation of the trachea about as large as a pigeon's egg. From some of these, lymphatic vessels were traced both on the trachea and on the œsophagus, infiltrated apparently with similar material to that causing the enlargement of the glands themselves.

The œsophagus, in its lower seven and a half inches, was much diseased. In the lower half of this tract the disease was general, the parietes were much thickened, and the mucous surface, which was irregular and prominent, was covered with a layer of tenacious mucus; on removing this, the subjacent surface was found to present an irregular honeycombed appearance due to the existence of an irregular network of opaque white fibroid material, from the roundish interspaces of which transparent pellets of jelly-like substance protruded. In the upper half of the diseased portion of the œsophagus the morbid growth occupied chiefly a long, somewhat irregular band, equal to one half or one-third the circumference of the tube, but it formed also a few small isolated patches. In these, the disease was partly such as is above described; but for the most part the surface formed an exceedingly fine, though irregular, fibrous-looking network, from the minute orifices of which, however, gelatinous fluid in small quantities exuded. The outer aspect of the lower part of the œsophagus was covered with an outgrowth having exactly the usual aspect of what is ordinarily called colloid cancer, and a similar growth, with for the most part smaller meshes, occupied in many places the whole thickness of the œsophageal walls.

Abdomen. The peritoneum was generally healthy, and most of the viscera were free from disease. Near the head of the pancreas was a tumour about as large as a hen's egg, made up of enlarged glands, and a few similar glands were scattered along the smaller curvature of the stomach and surrounded the cardiac orifice. The outer wall of the

the stomach, near the cardiac orifice, presented numerous opaque whitish bands, ramified and somewhat beaded, and apparently diseased lymphatic vessels. It presented also groups of what looked like herpetic vesicles, which increased in number and size as they approached the diaphragm, where they became continuous with the similar development on the outer wall of the œsophagus. On opening the stomach it was found diseased at its cardiac extremity only. It was affected there in its whole circumference, the diseased condition extending in radiating bands from the œsophageal orifice for about two inches into the adjoining portion of the stomach. The diseased walls were much thickened, especially at the cardiac orifice itself; and the mucous membrane presented in fact exactly the same condition which has been described as existing at the lower part of the œsophagus, and in addition numerous rounded projecting vesicles, some of considerable size, filled with jelly-like material. Towards its lower limits the diseased surface became more opaque, more finely reticulated and presented less obvious appearances of colloid disease. The rest of the stomach and the intestines were healthy. The enlarged glands within the chest and in the abdomen were more or less milky and opaque on section; but still, on close examination, presented numberless transparent points. Further examination (especially after they had been kept in spirit) showed that they were made up of a fine network of opaque fibroid tissue, the loculi or interstices between which were occupied by jelly-like material.

Microscopical examination.—Nucleated cells of various forms and shapes were very abundant in nearly every part of the morbid formations. (See Plate XIV., figs. 5, 6, 7, and 8.) They were especially distinct and numerous in the diseased lymphatic glands, and were little less distinct and abundant in the greater part of the subpleural growth and of that occupying the substance of the lungs. They were also well marked in those portions of the walls of the stomach and œsophagus in which the disease was least advanced. The cells were for the most part large, but very various both in size and shape; a few were round or oval, many of them presented tails, and in many cases these tail-like processes were numerous and irregular, and were found distinctly to form communications with other cells, or to dilate into roundish bodies which were apparently cells in process of formation. The cell walls were thin and transparent, generally ragged at some point, as though torn; and not unfrequently the cells themselves looked more like a piece of thin

membrane than a true cell. Very often a few cells were connected with one another in a nested manner. It appeared as though the cells had been formed by outgrowths from parent cells, and thus by their connection with one another had produced a kind of network. The cells contained nuclei which were almost always round or oval, with even, well-defined walls, but which varied in size almost as much as the cells themselves. The bodies which I have called cells contained generally one, but sometimes two or three, or even a larger number of, nuclei. The nuclei contained one, two, or several distinct nucleoli, which varied in size and were generally round, occasionally a little irregular, and besides these they contained a few minute granules. The spaces between the nuclei and the cell-walls were generally occupied by a little granular matter; and in some places entire cells, in others, portions of cells, and it might be a single process of a cell, were filled with groups of comparatively large oil-globules. In one instance, while examining a portion of the diseased lung, I met with a large oval body, larger in actual bulk than any cell I had seen, filled with round or oval bodies, which were clearly not oil, and which exactly resembled the nucleoli generally met with in other cells; this body was surrounded with ordinary cells, and appeared to be an overgrown or gigantic nucleus.

The colloid growth in the stomach and œsophagus presented the ordinary matrix of colloid cancer; it consisted of a network of delicately and often indistinctly fibrillated membrane, the interspaces of which were irregularly shaped and sized, forming loculi communicating more or less freely with one another. (Plate XIV., fig. 5.) Elongated cells and nuclei were visible here and there in the membrane, and frequently groups of refractive oil-globules arranged in strings or fusiform masses, lying parallel to the direction of the fibrillation. The colloid material which occupied the interspaces was in its great bulk structureless, but it was studded here and there with oil-globules, and here and there with cells more or less indistinct, but, so far as I could see, accurately resembling those found in the less obviously colloid portions of the disease. In many cases a roundish or oval mass of such cells was found imbedded, as it were, in a mass of nearly homogenous colloid material. In some of the lymphatic glands the same arrangement of matrix was distinctly observed, but where the cells were more abundant, the structureless colloid substance was less evident. (Plate XIV., fig. 8.) The same held good with regard to the lungs. In the greater part of the diseased portions of these organs, the only

structures that could be distinctly recognized were the cells before described (Plate XIV., fig. 6), and the normal tissues of the lungs. But even here it was observed in many places, where a satisfactory section had been made, that there was, in addition to a certain proportion of adventitious cells, a colloid matrix exactly like that observed in the stomach, and which, from its arrangement, the size and form of its loculi, and the structure of the matrix itself, could be clearly distinguished from the somewhat similar lung-tissue around. Many parts of the lung were distinctly pneumonic, and the air-cells were filled with cells resembling those of pus, and not like the cells previously described. These pneumonic portions of lung were frequently intermixed with those involved in the other disease, and it seemed to be pretty certain that the fact of this intermixture tended to conceal the colloid character of the pulmonary disease. In certain parts, where the diseased lung presented opaque, milky-juice-yielding patches, these patches were made up chiefly of lung-tissue, with the air-cells full of pus-like cells, and, as before stated, were probably for the most part simply pneumonic.

The creamy fluid from some of the (apparently) lymphatic vessels on the surface of the lung consisted chiefly of oil-globules of various sizes, forming frequently oval masses which were in some cases enclosed in a delicate membrane. It contained also, to the best of my belief, a few cells resembling those of the solid growths.

The diseased portions of the lungs, it may be added, presented large quantities of free nuclei, presenting great varieties of shape and size. (Plate XIV., fig. 7.)

Remarks.—The case above detailed is highly interesting in more points of view than one. Clinically it was interesting because the original symptoms enabled me to surmise that the patient was suffering from malignant disease of the lower extremity of the œsophagus; and the supervention of symptoms like those of bronchitis, coming on without obvious cause, and proving remarkably intractable, enabled me further to surmise that the disease had involved the bronchial glands, and had invaded the lungs from their roots, passing inwards along the vessels, and producing therefore no distinct tumour; the latter surmise being based of course upon the knowledge of the fact that mediastinal cancer and cancer of the bronchial glands frequently do extend into the lungs in the manner thus indicated. But the case has another point of interest which is purely pathological, and it is for

this specially that I have brought it under the notice of the Pathological Society. This second point of interest relates to the nature of the disease under which the patient laboured. Did the patient really suffer from cancer? and if so, was the disease colloid cancer? That the disease presented most of the ordinary phenomena of cancerous disease few can doubt; it had invaded the whole thickness of the stomachal and œsophageal walls; it had involved the neighbouring lymphatic glands and lymphatic vessels; it had spread abundantly through the lungs, and involved even the lining membrane of the bronchial tubes; moreover, one of the most characteristic microscopical features of the disease was the great abundance of cells which it presented, resembling those usually met with in encephaloid cancer. Again, that a large portion at least of the disease presented exactly the ordinary features of colloid disease, as it usually affects the peritoneum and stomach, there can be no question whatever. This fact is certainly true of the disease as it affected the stomach and œsophagus, and scarcely less true of the disease as it affected the various lymphatic glands and many portions of the lungs. It must be admitted, however, that the network of adventitious deposit on the surface of the lungs had no resemblance to colloid disease, and that with regard to much of that observed within the lungs, the colloid character was either very much masked or absent. Still close examination made it perfectly obvious, at least to myself, that there was a gradual transition between all the different naked-eye appearances of disease, and that there were no defined limits between those parts which were obviously colloid and those parts which had no characters of colloid whatever. Further, there was this important bond of union between them all, namely, that the same kind of cell-growth was everywhere present, comparatively few, yet quite obvious cells in the more manifest colloid, very abundant cells in the colloid of the lymphatic glands and of the interior of the lungs, and equally abundant cells in the sub-pleural portions of disease.

While fully admitting that the disease ordinarily termed colloid cancer does not commonly reproduce itself, as true cancer does, in organs remote from the organ or part primarily affected; it seems to me that the present case tends to prove either that colloid disease does really belong to the cancerous group of disease, or that there are different varieties of colloid disease, of which one at least is cancerous. There is no doubt that, while the matrix of all forms of colloid disease is essentially the same, different specimens of the disease present great differences

in the microscopical characters of the colloid juice; that in some cases this juice presents no visible cell-elements whatever, while in other cases this juice is crowded with distinct cells. Is it not likely that the cancerous or non-cancerous tendencies of any case may depend on differences of this kind? Dr. J. S. Bristowe, *5th of May*, 1868.

Report by the Committee on Morbid Growths on Dr. Bristowe's specimen of colloid disease.—An examination of the various diseased structures which had been preserved in spirits was made conjointly by Dr. Bristowe and ourselves. The growth in the œsophagus and in the neighbouring glands presented the ordinary features of colloid disease, and under the microscope the characteristic alveolar structure was observed. On examining sections of the lung the infiltrating growth described in the foregoing report was observed, and in a few places this presented the peculiar translucent appearance of colloid; under the microscope these portions also exhibited the characteristic alveolar structure. 19*th of May*, 1868.

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15. *Perforating ulcer of duodenum.*

G. H., a healthy-looking, muscular young man, aged 38, a sergeant in the band of the Scot's Fusilier Guards, in which corps he had served twenty-eight years. Had apparently enjoyed good health during his military services; been very little under treatment in hospital, and fully and efficiently performed duty, which involved the use of a large brass wind-instrument, accompanied by active exercise in marching. He had been known to complain occasionally of pain in the stomach, and after any rather greater effort than ordinary—any exertion that caused a strain on the abdominal wall, such as laughing loudly—he had been observed to place his hand over the right side of the epigastrium. His general health, however, was so good that he was training himself, by riding lessons, for the position of band-master in a Yeomanry corps, and was about to be married.

On the 29th of April he had in the afternoon played a game of rackets—a single match, which consequently called forth considerable exertion. In the evening he proceeded to a music-hall where he ordinarily performed, and was there attacked with violent pains of the abdomen, obliging him to discontinue playing, and to return home immediately. His sufferings became very intense; the abdomen was

tympanitic, but there was no vomiting. Collapse supervened, and the patient died about eighteen hours after the seizure.

Post-mortem examination.—Abdomen. The whole of the intestines were agglutinated together by lymph of a greenish-brown colour, and there was a small quantity of greenish fluid in the abdomen. The bubbling of air drew attention to the duodenum, and an ulcer, large enough to admit the passage of a crow-quill, was discovered about the middle of that viscus. There was no evidence of a malignant nature in the diseased structure. The other viscera were not examined. Although the perforation through the peritoneal coat was of the small calibre mentioned, the mucous and muscular coats were ulcerated round the orifice to the size of a fourpenny-piece.

Remarks.—The contiguity of the mouth of the ductus communis choledochus to the ulcer would appear to have occasioned rapid extravasation of its contents into the cavity of the abdomen, and, perhaps, rendered the inflammation more rapid than would have been the case in other parts of the alimentary canal. Cases of perforation of the duodenum, otherwise than as a sequence of burns, would appear to be infrequent, and their symptoms during life somewhat obscure and unreliable. But one other like instance is recorded in the *Transactions* of the Society, by Dr. Murchison (Vol. IX., p. 197), and its leading features, age of patient, etc., corresponded pretty closely to those of the present case. Dr. Frederick Robinson, 19*th of May*, 1868.

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16. *Malignant disease of the stomach, with old perforations.*

The stomach which I exhibit to the Society was forwarded to me by Mr. James Grosvenor Mackinlay, with the following particulars of the patient from whose body it was removed :—

"George S., aged 65, was admitted into Brentford Union Infirmary, on the 25th of April, and died on the 6th of May, 1868.

"Appearance on admission :—Patient thin, but not excessively emaciated; had an anxious expression of countenance; skin and conjunctivæ had a slightly yellow tinge; said his water at times had been very dark, but it contained only a very small quantity of bile whilst he was in the infirmary. He complained of pain over the epigastric and hypochondriac regions; pain not very acute, worse at times, increased by pressure. The regions above-named appeared full and

distended, and felt tense under one's hand. Ordered him beef-tea, milk, etc., and some brandy. This diet he always retained on his stomach, although at times he suffered much from hiccup, especially if he took solid nutriment—even a little bread crumbled in the beef-tea or milk. Bowels always acted; motions sometimes very dark. Patient died somewhat suddenly on the 6th of May.

Post-mortem examination made on the 7th of May. On making the usual incision from sternum to pubes a quantity of fluid rushed out, and at first I thought that my assistant had cut into the stomach. Liver was adherent to anterior walls of abdomen and to stomach, pancreas to stomach, and stomach to spleen; in fact, all these viscera were so matted up with adhesions to each other that it required some force and care to separate them. Liver pale, but healthy apparently; pancreas a mass of scirrhus; spleen healthy; stomach enormously thickened, probably infiltrated with cancer; pyloric orifice smaller than natural. The fluid before alluded to continued to pour out, and it was now seen that there was a round hole in the anterior wall of stomach (large enough to admit two fingers) through which the fluid came. There was also a smaller hole at the back of the stomach. The fluid was of a light yellow colour, thin, and nearly clear, and smelt of sulphuretted hydrogen; removed about three pints of it. The mesentery was very much thickened; no appearance of peritonitis, either recent or chronic. Kidneys and lungs healthy.

"I learned from the man's relatives that he had been ailing for about a year, but had not laid up; in fact, he came to stay with them three weeks before his removal to the infirmary. During this time he complained of feeling very ill and weak, also of pain over the stomach, and of what he called the water rising in his throat constantly; still he did not absolutely vomit, and took the ordinary every-day food with them until a few days before his removal. He used to get about, and one day went to London, walking some four or five miles of the distance. He had been formerly in better circumstances,but had lost a large sum of money. He had always lived steadily."

The walls of the stomach are much thickened, and of a gelatinous aspect, but hard. The piece of pancreas left in contact with that viscus is completely scirrhous.

In the front wall of the stomach is a circular opening as big as a half-crown, and in the posterior wall another perforation more oval in form, about the size of a shilling; both these openings are free, unplugged, and unstopped by any adhesion or neighbouring viscus. The

edges of the opening are singularly perfect; they are round and finished, having healed so long ago that no line of cicatrix, no scab or ulcer, is perceptible, the margin being as clear and as modelled as reflected edges of natural formation. Around them is no roughening of the serous membrane, no appearance as though adhesions had been broken down. When the lining membrane of the stomach is examined by the finger passed into one or the other opening, it is found to be hardened. This is especially the case at the pylorus; here the whole lining is thrown into hard rugæ; the valve itself is thick and indurated.

The position and appearance of these holes and the description given to me by Mr. Mackinlay caused me to conclude that the one in front must have opened into the anterior layer of the great omentum, so that the ingesta escaping from the stomach lay between the folds of that layer. This being distended into a cavity was the part opened by the assistant, and believed at first by Mr. M. to be the stomach.

The facts in regard to the posterior opening are less clear, but it is evident that another cavity lying behind the stomach communicated with that viscus by an opening smaller than, but in all respects similar to, the anterior one; whether, however, this cavity was situated in the small omentum or was otherwise formed, there is no evidence to show.

Mr. Richard Barwell, 19*th of May*, 1868.

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17. *Ulcer of stomach caused by swallowing hydrochloric acid.*

The following account of the patient's symptoms is abridged from notes by Mr. Bolton, Physician's Assistant, University College.

William W., aged 11, was admitted in the afternoon of the 1st of May, with the following history:—

On the 30th of April he swallowed about ℥j. of "spirits of salt," and it was not till ten hours after that he was brought to the hospital. He was then rather prostrate, pulse beating quickly and feebly. He complained of great thirst and there was constant vomiting of blood-stained mucus. There was no ulceration, but there was redness about the throat. The tongue was covered with a thick creamy fur. No tenderness at the angles of the jaw. There was pain and tenderness at epigastrium. He was put upon the following treatment:—Mustard poultice to epigastrium; lime-water and milk to drink, and Tinct. Opii ηιvj. every second hour. At 11 p.m., vomiting still continued; great pain in stomach; pulse full. Ice to suck.

May 2nd. Face flushed; constant vomiting of mucus. 4. p.m. Temperature 100°·4; pulse 100; respiration 24; not so sick. 10 p.m. Sleeping soundly; face flushed and hot; has not been sick since three o'clock.

May 3rd. Not vomited since last report; very little pain in stomach. 9 p.m. Feels pretty well; rather hot; temperature 101°; pulse 108.

May 4th. Complains of great pain and tenderness, limited to a spot about an inch to left of middle line of abdomen. Temperature, 9 a.m., 100°; pulse 100; respiration 24. To have Tinct. Opii ♏iij. every three hours. Hot fomentations to abdomen. 9 p.m. Pain and tenderness still very great, and there is some general abdominal pain. Temperature 100°; pulse 96.

May 5th. Better. All foregoing symptoms better. Temperature, 10 a.m., 99°; pulse 88. Thirst. Creamy fur on tongue. Skin cool. 9 p.m. Disposed to sleep. Temperature 99°·5; pulse 90. From this date he progressed favourably, and walked about the wards, the only symptoms remaining being those of slight gastric catarrh; but on the 10th he was obliged to take to his bed again, on account of an attack of hæmatemesis, when he brought up about half a pint of clotted blood.

May 11th. Pain and tenderness at the same spot as before. Slight nausea, but no vomiting. Temperature in the morning 99°·2; pulse 104.

May 12th. Worse. Temperature 104°·2; pulse 124; respiration 24; was put on the opium and fomentation treatment, with milk-diet. 9 p.m. Temperature 101°·5; pulse 120.

May 13th. Better. Less pain and tenderness. Tongue covered with white fur. Both tonsils inflamed. Temperature 101°·2. Slight cough. Expectoration slightly blood-stained.

May 14th. This afternoon, at half-past four, the patient was found vomiting large clots of blood, and complaining of intense paroxysmal pain in the abdomen; while the pain lasted, the pupils were widely dilated. The hæmatemesis continued notwithstanding the treatment pursued—ice, gallic acid, opium, and iron; mustard-poultice to epigastrium. The patient eventually expired at 9 p.m., his system being perfectly drained of all its blood.

Post-mortem examination, forty-eight hours after death.—Rigor mortis persistent.

Chest and abdomen opened. Stomach found adherent to the abdomi-

nal wall at its cardiac end by easily broken down adhesions, at its fundus to the central part of transverse colon by pretty firm adhesions, and inferiorly to the edge of liver. Peritoneum healthy. No lymph or sign of inflammation anywhere else in abdomen.

Pericardium contains a small amount of clear serosity. Pleuræ contain a slight quantity of clear fluid.

Mucous membrane of pharynx and tonsils very opaque, pulpy, and softened. Papillæ at base of tongue greatly enlarged. Tonsils enlarged, soft, opaque, and pulpy throughout, and filled with a grumous puriform matter. Uvula elongated and very opaque; its mucous membrane healthy.

Mucous membrane of œsophagus paler than natural, more opaque, intact, but very soft. Stomach contains a grumous fluid. About one inch and a half from the pyloric ring is an ulcer measuring one inch and a quarter by one inch, somewhat irregular in outline, and completely destroying the mucous membrane; in its floor are numerous little elevations, and the general base of the ulcer is covered with fine papillæ. In the centre of the ulcer is a vessel completely eroded, the end of which floats about in water, and a bristle can be passed down into it for a short distance. The arterial characters of the coats was confirmed by microscopic observations by Dr. Legg. The edges of the ulcer are swollen, thickened at some places, and finely granular; at the extreme edge immediately within the swollen border, there is a look of commencing cicatrization. There is another vessel apparently eroded near the edge of the ulcer. Mucous membrane of rest of stomach covered with an opaque mucus, a little too transparent at fundus, and somewhat thicker than natural. No mammillation. Superficial layers somewhat softer than natural. No prominence of solitary glands. Between stomach and colon is a mass of thickened glands. Mesenteric glands a little enlarged. Duodenum has its mucous membrane opaque, but is otherwise healthy. All the other organs of the body bloodless, but healthy. Cavities of the heart perfectly empty. Spleen rather pulpy. Dr. Wilson Fox, 19*th of May*, 1868.

B. LIVER, MESENTERY, ETC.

18. *Specimen of very large fatty liver.*

L. A., a short and very stout woman, aged 32, a German, was a patient at the Eastern Dispensary, and was admitted under Dr. Semple in September, 1867. Her abdomen was very much enlarged and hard;

she was yellow in complexion, and complained of general uneasiness and weakness, rather than of actual pain or suffering.

On a careful examination it was found that the liver projected downwards nearly as far as the umbilicus and over to the left side; its surface was quite smooth, and its free edge somewhat rounded; below the liver the whole abdomen was tympanitic. The urine was tested and was found to be albuminous. The previous history, as far as it could be ascertained, did not throw much light upon the origin of the disease. The patient had lived in Germany during the earlier part of her life, but had resided in London for the last six or seven years. She had not lived in an aguish district, so far as she knew; her home in Germany was in the vicinity of Coblentz. The present enlargement of the liver had begun about two years ago, and had increased ever since. The treatment consisted in the application of iodine externally, and in the administration of tonics and alteratives, including the regular use of small doses of the dilute nitro-hydrochloric acid, but without much relief. A variety of symptoms, some favourable, others unfavourable, supervened; among the former may perhaps be included copious discharges of dark faeces, and of blood from the vagina. But great depression also ensued, with black tongue, dislike of food, great restlessness, and increased yellow tint of the face, skin, and eyes. She died on the 6th of October, and the *post-mortem* examination was made on the 8th.

The body was covered with fat, the fat being about an inch thick over the chest and abdomen, and the muscles were well developed. The liver occupied about half the cavity of the abdomen. The spleen was much enlarged and congested. The kidneys were enveloped in fat, and were large and of flabby consistence. Their cut surface presented a granular appearance in many parts of the cortical portion. The omentum was loaded with fat. There was no dropsy. The liver was smooth on its surface, and though enormously enlarged, it preserved its normal shape, and was of uniform colour and texture, the former being yellow; its edges were somewhat rounded off. It weighed exactly twelve pounds. A portion of the liver being cut off was found to present an opaque, pale-yellow colour, but the tint was uniform, and it cut like liver. On microscopical examination, I could find no definite appearance of structure, but a number of oil-globules. Iodine was employed on a small portion, but no change of colour ensued, nor was any further change produced by the addition of a few drops of sulphuric acid. Dr. R. H. Semple, *15th of October*, 1867.

19. *Fatty tumour of mesentery removed during life.*

This tumour, a lobulated mass of fat weighing twenty pounds, was removed from an unmarried lady, 43 years of age. She had been suffering for several years from an abdominal tumour, and for more than a year had been confined to her room. Various opinions had been entertained as to the nature of the tumour; and on the 24th of October, 1867, Mr. Spencer Wells made an exploratory incision and found that the tumour was a mass of fat. He closed the opening to gain time for consultation as to future treatment. The wound united well. The patient suffered very little, and it was arranged that an attempt should be made to remove the tumour. This was done on the 5th of November, 1867, and large masses of fat were removed after dividing a loose cellular capsule. A large lobule felt in the neighbourhood of the right kidney was not disturbed. Not more than three or four ounces of blood was lost. Four vessels were tied in the tissue of the capsule. The tumour appeared to have originated in the mesentery. Some of the lobules were evidently *appendices epiploicæ* enormously hypertrophied.

Mr. Spencer Wells, *5th of November*, 1867.

Appendix.—The patient died fifty-eight hours after the operation. On *post-mortem* examination, traces of recent peritonitis were observed, but none of bleeding. The mass of fat left on the right side involved the right kidney, pushed the ascending colon over to the left, and adhered to the under surface of the liver. Many mesenteric glands were enlarged and enveloped in fat. There was not more fat than usual in the omentum. The weight of the portion of fatty tumour not removed during life was estimated at ten or twelve pounds, but it was not weighed. The uterus and both ovaries were healthy. S. W., *May*, 1868.

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20. *Abscess of liver opening into right pleural cavity and then into the bronchi.*

J. W. E., aged 31, was admitted into St. Thomas's Hospital on the 6th of August, 1867. He stated that he entered the army when 17 years old, and went to India when he was 21. While there he had several slight attacks of fever, but never any serious illness, and he led a regular life. He returned home in June, having completed his short service, and when discharged was in good health. Three days, how-

ever, after he landed he was taken with diarrhœa, and he was never entirely well afterwards. When admitted, he had been suffering from an attack of diarrhœa for a day. His complexion was sallow and the conjunctivæ somewhat tinged. The tongue was thickly coated with a whitish-yellow fur, and somewhat dry. Pulse feeble, quiet, 96; skin cool and moist. The hepatic dulness was not materially increased in extent, but there was considerable tenderness to the touch under the right false ribs, and it gave him pain when he breathed, so that his breathing was very imperfect and irregular. There was also some general abdominal tenderness, and the bowels were acted upon about eight times daily. He was directed to have a grain of calomel and half a grain of opium every night, and to take the compound chalk mixture as required, and to have a small quantity of brandy. Under this course of treatment the diarrhœa was much checked and the stools became more solid, while the abdominal and hepatic tenderness were relieved and the sallowness of the complexion much subsided. On the 15th, the urine was tested and found to have a specific gravity of 1028, and to be very slightly albuminous. A blister was applied at the lower part of the right side, to be followed by linseed-meal poultices. On the 19th, the former remedies were discontinued, and replaced by the nitro-hydrochloric acid with a bitter infusion.

After this time he so much improved that he was allowed at the beginning of September, to go into the garden; but about a week after he was seized with pain in the right side, followed by a severe cough, and after a time he expectorated a considerable quantity of matter of a brownish colour and streaked with blood, and the diarrhœa again became more troublesome. When I saw him after my return home from my autumn holiday on the 30th of September, I found him very much worse than when I had last seen him. The whole of the right side was very dull on percussion, except over a space somewhat larger than a five shilling-piece between the nipple and sternum, where the resonance on percussion was somewhat tympanitic; but the relative levels of resonance and dulness did not alter with changes in the position of the patient. The integuments in the middle and lower lateral region were œdematous, and there was a superficial sounding subcrepitation, doubtless pleural, over nearly the whole of the left front, and the vocal thrill was there somewhat exaggerated; while behind, the respiratory sounds were abolished, the vocal thrill much impaired, and the voice had an ægophonic character. In the tympanitic portion the respiration was feebly audible, and had a somewhat amphoric sound.

The liver extended down some distance into the abdomen, and was very tender to the touch. His general condition also was much altered for the worse. He was thinner than before, and his complexion much paler, and the eyes were glassy. The icteroid tinging of the face and conjunctivæ was less marked, but the skin was somewhat sallow; the pulse quick, 100 in the minute, and feeble; the tongue furred, and the bowels still relaxed. He continued to take the nitro-hydrochloric acid, with a quarter of a grain of opium, three times daily, to restrain the diarrhœa. Poultices were again directed to be applied on the right side, and he was ordered to have three glasses of wine daily. On the 7th, he was upon the whole better, the pain in the side and œdema were less, and he had been entirely free from the cough and expectoration till that morning, when he suddenly expectorated on awakening a large quantity of sputum, which was massive, airless, in some places with a bloody tinge, and in others of a greenish-yellow colour, and obviously purulent. From this time the symptoms continued much the same till the end of his life; he usually brought up every day more or less of the peculiar sputum described. It sometimes rose in his throat without effort, at others he brought it up only after a severe fit of coughing, and especially during the night. The pleural signs continued as before, and the side was always more or less painful. He lay on his back, and was obviously growing thinner and weaker. About a week before his death the expectoration almost entirely ceased, apparently from want of power to bring up the secretion, and the œdema again occurred in the right lateral region. He died on the 7th of November.

The *post-mortem* examination took place on the morning of the 8th. The right pleural cavity was found entirely filled with a thick purulent secretion, of a dirty yellow colour, and precisely similar to that which had been expectorated during life. At the lower part of the cavity an aperture, large enough freely to admit the whole hand, was found extending through the diaphragm and leading into a large cavity in the substance of the left lobe of the liver. This cavity was rough in its interior and contained pus very similar to that in the pleural cavity. The lung was entirely compressed, and bound down to the left side and upper part of the pleural cavity. Several huge ulcerated spaces existed on its surface, by which the empyema penetrated into the substance of the lung. The liver extended some distance over the abdominal cavity; it was of a livid colour and appeared much congested, but not generally softened or otherwise diseased.

The colon, along a great portion of its extent, displayed numerous ulcers, some of which were of old date, being smooth on the surface and with rounded and shelving edges, while others were evidently of more recent origin, their edges being rugged and abrupt and the base of the ulcer irregular. Dr. Peacock, *19th of November*, 1867.

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21. *Fibro-fatty tumour of the abdomen, weighing fifty-five pounds.*

I was requested on the 17th of January to tap S. C., aged 63 years, as soon as possible, as she was exceedingly tense in the abdomen and suffering most urgent dyspnœa. A few hours previously Dr. Wilks had seen her, and recommended the operation as the only means of obtaining even temporary relief. Upon inquiring into the history of her case, I found that she was a widow, had always enjoyed good health, and had never had any children. About four years ago her abdomen began to increase in size; she fancied the swelling first commenced about the right iliac region, and it has continued gradually to enlarge. Her general health and activity of body have remained the same, the only inconvenience she seems to have suffered being a constant desire to pass her water and motions. A few months ago anasarca appeared in both legs; still she was able to get about until within the last week. She is unable to lie down from fear of suffocation, and complains of great pain over the right lumbar region; she moves about now, though with difficulty. For several weeks past and at the present time she sleeps in an arm-chair. The abdomen is enormously distended and exceedingly tense; there is a distinct sense of fluctuation, and the vibratile wave is most perfect over the whole. I did not hesitate to attempt to perform the operation of paracentesis abdominis, and plunged the trocar and cannula into the abdomen in the usual place, but found the instrument evidently pass into a solid mass. Upon withdrawing the trocar no fluid escaped, but upon removing the cannula a quantity of serum oozed out. I again attempted, at two other places—one of them the umbilicus—to draw off some quantity of fluid, but without success. On each occasion the instrument evidently went into a solid mass. I therefore desisted from any further trial, believing the mass to be a solid, possibly ovarian, growth, with probably a small quantity of ascitic fluid between it and the abdominal wall.

Dr. Hicks saw the patient on the following day, and upon careful examination expressed a decided opinion concerning the fluid in the

abdomen, and suggested that an incision should be made until the fluid was reached; but as I felt convinced of the solid nature of the contents so far as my trocar went, I declined to carry out this suggestion, and very reluctantly was compelled to leave the patient without any further operative measures. He drained away a quantity of serum from the wounds I had made, and obtained a marked amount of relief from that exudation. I did not see the patient again, and nothing was done for her. She lived sixteen days after this time, and died from apnœa.

The *post-mortem* examination was made by Mr. Fenaher, a student of Guy's Hospital, at whose residence she was housekeeper. I regret to say I did not hear of her decease until three days after the *post-mortem* examination had been performed, when the tumour was brought to me, and the following account given of the appearances: The parietes of the abdomen were very thin, and between them and the tumour there were adhesions everywhere, easily broken down by the hand. At the under surface of the diaphragm the separation had to be effected with the knife, and a few of the muscular fibres were attached to the tumour. The ascending colon was seen lying on the front of the mass, and to the right of the mesian line of the body; no other viscera were visible. The intestines were placed behind and on both sides. The viscera were all healthy. Occupying the whole of the abdomen was the enormous mass, weighing fifty-five pounds upon removal, not attached by any pedicle or well-marked root to one spot. It was evidently composed of fat and fibre-tissue, lobulated as an ordinary fatty tumour, but not quite so greasy.

Dr. Moxon says the microscopic examination of the tumour showed in all parts a large proportion of ordinary fat-cells. In the greater part of the tumour—the part that had the appearance of common healthy fat—these, with the usual connective filaments and vessels, made up the tissue which was histologically perfect fat. But in the many firmer and more fibrous-looking parts there was a greater quantity of the connective element than is present in common fat, and in it were great numbers of irregular caudate nucleated cells. These cells contained more or less, and generally much, granular fat. All grades of change from this granular state to that of true fat-cells could be seen, so that these granular cells probably are stages in the development of fat-cells from connective tissue-corpuscles.

This case is of considerable pathological, as well as clinical, interest. I cannot find any record in the *Transactions* of the Society of so large a mass of fat being developed in the abdomen, and therefore I look upon

the specimen as almost unique. Mr. Spencer Wells brought a mass of considerable size on the 5th of November, recorded in this volume (page 243), but that only weighed twenty pounds; it appeared to grow from the mesentery. Not having been present at the *post-mortem* examination of my patient, I am unable to say from whence her tumour grew; but it appears most probable that it was omental fat. An error in diagnosis was made by all who saw this woman; the exceptional character of the case appears a sufficient reason. It is questionable whether there was a layer of fluid between the tumour and the abdominal walls, which were as tight as a drum-head and thus gave rise to the very perfect vibratile wave; or whether the case might be compared to one of those chronic abscesses which the surgeon has sometimes to explore with a trocar or grooved needle, previous to its being laid open, and which the most experienced have mistaken for a lipoma and *vice versa;* or whether fat at the temperature of the body be not ordinarily in a semi-fluid condition, and thus have given rise to the perfect sense of fluctuation.

Mr. J. Cooper Forster, 18*th of February*, 1868.

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22. *Acute atrophy of the liver.*

The subject of Acute Yellow Atrophy of the Liver is one which has not yet been sufficiently investigated, although from many points of view of great pathological interest. The disease in this country is so rare that all examples of it deserve to be put on record. The liver exhibited to the Society was reduced to about one half of its normal weight, and presented all the typical anatomical characters of acute atrophy, including the presence of leucine and tyrosine, which were also present in the secreting tissue of the kidneys. It is worth noting, however, that the crystals of these substances were not found in the tissue of the liver and kidneys when fresh, but were deposited in large quantity in these organs after they had been for some days immersed in spirit. From an accident, the only specimen of urine obtained was not examined with sufficient care.

Mary Ann M., a sempstress, aged 19, was admitted into the London Fever Hospital, on the evening of the 13th of February, 1868, and was seen by me on the following morning. She was unmarried. Her father was a German, but she had been born and brought up in London. Her sister was not aware that she had suffered from any mental trouble, and believed that her catamenia had been regular;

there was no history of syphilis. There had been no other case of illness in the house from which she came. She had been quite well until the middle of January, when she began to complain of loss of appetite and nausea, and after ten days her skin was noticed to be slightly yellow. A week before admission she took to her bed, complaining of pain in her stomach, aggravated by any movement, but unattended by vomiting. For about a fortnight before admission her bowels had been relaxed three or four times a day, the motions at first being yellow, but latterly green. Three days before admission she began to be "light-headed."

On the morning after admission the following note was taken:— "Patient is a well-nourished girl, and has deep jaundice of the skin and conjunctivæ. She is scarcely conscious, and can give no account of herself. Since admission she has been very restless and delirious, often screaming out loudly. The pupils are much dilated, but equal. There is no eruption on the skin, which feels dry and hot, the temperature in the axilla being 101° Fahr. The pulse is 116, and weak. The cardiac and respiratory signs are normal. The tongue is dry and brown, and since admission there has been frequent vomiting of a dark brownish fluid, evidently containing blood. The bowels have acted several times, and from the nurse's account, who describes the motions as having been very dark, watery, and offensive, they probably also contained blood. The abdomen moderately distended and tympanitic; pressure upon it does not seem to cause pain, but the respiration is thoracic, and there is an obscure thrill, as from fluid, on tapping both flanks. The hepatic dulness is greatly diminished, not exceeding an inch and a quarter in the right mammary line, and its lower margin being fully two inches above that of the ribs. The urine has been passed in bed, but the bladder is now full."

About two pints of urine were drawn off by catheter, which had the following characters. It was acid, and had a specific gravity of 1015. It had a dark greenish-brown colour, but presented the reaction of bile-pigment in only a faint degree. Heat produced no change on it; but, on adding nitric acid, after boiling, it became turbid, as well as very dark. Nitrate of urea could be obtained from it in only very small quantity, but no crystals of leucine or tyrosine could be detected, either as a separate deposit on standing, or after evaporation of a few drops of urine in a watch-glass. Unfortunately the urine was thrown away before it could be submitted to a more careful analysis.

The patient was ordered a mixture containing nitric acid, nitric

ether, and nitrate of potash, with milk, beef-tea, and four ounces of gin. She nevertheless became rapidly worse, although she was less noisy and delirious, and seemed to sleep a good deal at intervals. The diarrhœa continued, the motions being passed in bed, and being still liquid and very offensive, but of a light yellow colour. In the evening of the 14th the pulse was 144; respirations 132 and thoracic; temperature in axilla 100°·8. She continued in much the same state, and died without any convulsions, at half-past seven on the following morning, five days after the first appearance of cerebral symptoms.

Post-mortem examination. — Body well nourished. Much purple lividity of integuments. No scars on genitals or in groin; and deep jaundiced hue of skin and of every tissue of the body.

Three or four pints of slightly turbid serum in peritoneum. Considerable fine vascular injection of the serous covering of the small intestines, and particularly of that of the duodenum. The peritoneum of the intestines and of the liver was also coated at many places with a thin film of recent lymph, easily separated. The stomach and intestines were distended with gas, and the liver was completely hidden below the right ribs, not more than an inch of it being opposed to the thoracic wall. The organ was extremely small; its largest diameter measuring six inches and a half, and the antero-posterior diameter of the right lobe only five inches. It weighed only twenty-eight ounces, or exactly one half of the standard weight for the girl's age. It was very flabby, and the outer surface was wrinkled, but free from any granular or nodular irregularities. The substance of the gland was extremely friable, and of almost pulpy consistence, and presented at some places a tolerably uniform rhubarb-yellow colour with scarcely any appearance of lobules, and at other parts a similar yellow colour interspersed with red. Under the microscope there was found a large quantity of free oily and granular matter, with globular masses of leucine and bundles of needles of tyrosine, and also, more especially at what corresponded to the centre of the lobules, entire secreting cells of large size and loaded with oil-globules and dark greenish-yellow pigment. The bile-ducts were patent throughout; they were not dilated, and their lining membrane presented no tinge of bile, although the gall-bladder contained about a teaspoonful of dark-green viscid bile, which could be squeezed out through the cystic duct. The contents of the intestine consisted throughout of a very pale yellowish pulp. The mucous membrane of the bowels was nowhere ulcerated. The spleen was of normal size, but rather soft. Both kidneys were slightly

enlarged, extremely soft, and tinged with bile-pigment. The renal epithelium contained a large quantity of fine granular matter; crystals of both leucine and tyrosine were detected in the renal tissue. The bladder was empty, and the uterus was unimpregnated. There was much hypostatic congestion of both lungs. The pericardium contained more than an ounce of yellow serum; the heart was healthy; the blood was dark and fluid. Excepting an increased amount of serosity in the lateral ventricles and beneath the arachnoid, neither the brain nor its membranes presented anything abnormal.

Dr. MURCHISON, 18*th of February*, 1868.

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23. *Dropsy of the gall-bladder, and cancer of the duodenum and lung.*

I was requested to see the patient from whom the specimen was taken by Mr. Francis, of Acton, on account of supposed organic disease of the stomach. She was a dark-complexioned woman, 42 years of age, and attributed her illness to having a year previously struck herself against a post in the dark. She was then much hurt in the right hypochondriac region, and a month afterwards began to vomit. Vomiting had since occurred almost every night, at about ten p.m. The ejecta were described as at times consisting of "dark yeasty stuff," and I found that they contained sarcina. There was constant severe "twisting" pain, increased by food, in the region of the navel, and there was obstinate constipation. A hard nodular tumour existed in the abdomen, the lower part of which was placed two inches below the umbilicus and one inch to the right of the mesian line. It was here about two inches across, but widened as it ascended, until it was finally lost under the cartilages of the ribs. I was unable to determine whether the case was one of enlarged and cancerous liver, affecting the stomach by pressure, or of a cancerous pylorus, which, as I had found in another instance, may become completely displaced by the extraordinary movements of the stomach in its efforts to squeeze its contents through the obstructed outlet. The patient lived nearly two months afterwards, but I had no opportunity of seeing her again.

On *post-mortem* examination we found the liver enormously enlarged, and studded, especially the left lobe, with whitish cancer-nodules; on section its structure everywhere presented more or less cancerous infiltration. The tumour felt during life was found to be formed by the liver. The gall-bladder was tensely distended, and had a semi-trans-

parent appearance. It contained a clear straw-coloured alkaline fluid. The cystic duct was obstructed by the cancerous infiltration. The absence of jaundice throughout the patient's illness is to be explained by the common duct having remained open. The fluid gave no indications of bile by the nitric acid test. Its deposit, examined by the microscope, presented large cells filled with granular matter, and a few minute rectangular crystals of cholesterine. The stomach was not enlarged, and was otherwise healthy; but on passing the finger through the pylorus it was found that the adjoining portion of the duodenum, to the extent of about an inch and a half, was completely imbedded in a cancerous mass, which involved the omentum and was fused as it were into the liver. The duodenum, or more correctly what represented it at this part, admitted the forefinger with some pressure; its walls were everywhere rigid, and on laying it open it was seen to be completely denuded of mucous membrane. None of the adjoining organs appeared to be affected by the disease, and the lungs were quite healthy.

The only other case of dropsy of the gall-bladder recorded in the *Transactions* of the Society, is one in the ninth volume, by Dr. Vanderbyl. That case was attended with intense jaundice, and also differed from the present one in the circumstance that the common bile duct, as well as the biliary ducts in the liver, were much distended. Cancer of the duodenum is of rare occurrence, and it is impossible to say whether or not in the present instance the disease was primary in that organ.

As regards the etiology of cancer, the case is interesting from the positive manner in which the patient traced the first symptoms of the disease to a mechanical injury. Dr. Leared, 18*th of February*, 1868.

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24. *Chronic atrophy of the liver; hæmatemesis.*

The patient, a man, aged 62, was admitted into the Middlesex Hospital, under the care of Dr. Goodfellow, on the 14th of January. His previous health had been very good, with the exception of an attack of inflammation of the chest eighteen years ago. He had been in the habit of drinking a good deal of beer, but no spirits. Two months before his admission, his health began to fail, he lost flesh and strength, had a slight cough, and his feet swelled a little; soon after, his belly began to grow large and he had some pain and uneasiness after food, but no vomiting.

On admission, he was a good deal emaciated; there was great ascites; his belly measured thirty-seven inches and a half in circumference; conjunctivæ slightly jaundiced; urine contained bile-pigment and pink lithates, but was free from albumen; feet slightly œdematous; heart's action feeble, but without any abnormal murmur; respiratory sounds normal. The hepatic dulness commenced at the fourth rib in the right mammary line; the lower margin could not be made out owing to the great ascites. He had no pain or tenderness anywhere, but complained of a sensation of weight and uneasiness after food. Bowels were costive; motions of natural colour. He was purged by a senna draught, and his bowels afterwards continued very loose. On the 17th of January he vomited several times, and the vomiting continued to recur. On the 3rd of February he brought up a large quantity of black blood and also passed stools like pitch. The hæmatemesis and pitch-like stools continued, and he died from exhaustion on the 10th of February.

On *post-mortem* examination the peritoneal cavity was found enormously distended with fluid and showed slight traces of recent inflammation. The liver was diminished to less than half its normal bulk, and weighed only twenty-two ounces; the left lobe had almost disappeared, measuring only one inch in width. The capsule was somewhat thickened and had a shrivelled appearance; the surface was granular, especially at the borders. The consistence was not firmer than normal. On section, the surface was of a very dark colour, and was mapped out into little groups of lobules, but showed no intersecting fibrous tissue. On microscopical examination, the hepatic cells were found loaded with dark pigment and very granular, but there appeared to be no growth of interstitial fibrous tissue between the lobules. The gall-bladder and ducts were normal.

In this case the clinical history and the effects of the disease closely resembled cirrhosis, but the condition of the liver which gave rise to them was of a different nature to ordinary cirrhosis, the disease appearing to consist rather in the gradual atrophy of the secreting tissue than in an inflammatory process giving rise to a proliferation of nuclei and the formation of fibrous tissue throughout the liver-substance as in true cirrhosis. The disease also in this case came on independently of spirit-drinking. Dr. Cayley, *3rd of March*, 1868.

25. *Two cases in which large gall-stones were passed during life, after producing symptoms of intestinal obstruction.*

Case I.—Mrs. L. was a patient of Dr. Young's, of Salisbury, who kindly lent the specimen for exhibition to the Society, and who afterwards presented half of it to the Museum of Guy's Hospital. She was 56 years old, of leucophlegmatic temperament, and sedentary habits. Some years since she had suffered from attacks of a similar kind, which were attributed to gall-stones: and on more than one occasion she had had slight jaundice. Her illness commenced with severe sickness, pain, and constipation. Her countenance was very anxious and dusky in colour; and she was altogether much depressed. She was treated with warm fomentations, injections, opiates, and the Mist. effervescens. There was considerable distension of the abdomen. After seven days the bowels were freely opened: a large quantity of fetid, scybalous, clay-coloured motion came away, to the patient's great relief; and the calculus was passed with pains like those of labour. Afterwards a good deal of inspissated bile was passed, and also altered blood. This continued for some days. She made a good recovery, and has since had no return of her illness.

The calculus was of a pyriform shape, and had evidently been moulded on the inner surface of the gall-bladder. Its surface was nearly smooth. One extremity, which had occupied the fundus of the gall-bladder, was rounded. Towards the other end, the calculus was constricted, and it here presented a rough surface, as if it had been broken off. On section, it displayed numerous concentric lamellæ, with radiating crystalline striæ. Dr. Stevenson analysed it, and found it to consist almost entirely of cholesterine. In its dry state, and after some loss by sawing it in halves, it weighed four hundred grains. It measured two inches and a quarter in length, and one inch and one-tenth in diameter.

Case II.—A watch-maker, aged 64, ran out of his house to stop an apprentice, who was running away. He suddenly turned very pale and faint, and was unable to speak; however, he recovered from this attack and remained pretty well for two or three days, after which he again fell ill, suffering, among other symptoms, from constipation; this lasted three or four days, during which time he went frequently to the closet, but passed only very small evacuations. He then, while at stool, found that something was protruding from the anus; this gave him great pain, and had to be removed with a spoon-handle by Mr. Ebsworth, who was his medical attendant.

This patient had for a long time previously suffered from a pain in the side. From this he has since been entirely free.

The calculus was very like the other, but somewhat smaller. It weighed, when dry, three hundred and fifty-three grains. It measured two inches in length, and one inch and one-fifth in diameter at the widest part.

Remarks.—If one may judge from the published records of such cases, it is far less common for calculi so large as these specimens to be passed during life, than for them to be found within the intestine, after having caused fatal mechanical obstruction.

The *Transactions* of the Society contain five or six examples of the latter, not one of the former, occurrence. Frerichs,* however, gives the case of a man, aged 50, who passed a gall-stone the size of a walnut, surrounded by a layer of dried fæces three lines thick, after symptoms of obstruction, with stercoraceous vomiting, from which he entirely recovered after the stone had been evacuated. One of the specimens in the Guy's Hospital Museum (Prep. 1987) has a similar history attached to it. It consists of "two very large biliary calculi, the one nearly globular, the other conical, but concave at its base to fit the former. They appear to have filled the gall-bladder, and to consist of cholesterine. They were passed per anum by a middle-aged lady, who afterwards enjoyed good health." These calculi are even larger than the specimens above described. The spherical one weighs in its dry state four hundred and sixty-two grains; the conical one, three hundred and ninety-three grains. Their total weight, therefore, is eight hundred and eighty-five grains. It accords with general experience, that the patients were advanced in years in both the cases which form the subject of these remarks.

It is well-known that where a large gall-stone has been found blocking up the intestine, there has generally been a communication between the gall-bladder and the duodenum, through which, and not along the duct, the calculus had passed into the bowel. It seems not unlikely that in those cases in which a large stone is passed per anum, its escape may have been facilitated by the circumstance that the part of the bowel into which the gall-bladder opened was the transverse colon, and not the duodenum. But, although many of the older systematic writers speak of such an occurrence, modern observation does not sup-

* A Clinical Treatise on Disease of the Liver, translated by Dr. Murchison, Vol. II., p. 546.

port them. Dr. Murchison* some years ago failed to find any example of a communication between the gall-bladder and the colon, excepting in cases of cancerous disease. A preparation has recently been added to the Guy's Hospital Museum, in which there is an opening of the size of a crow-quill between these two viscera, which are also firmly adherent to one another. The gall-bladder was of the usual size; it contained an angular gall-stone, and a very bright-yellow clear fluid. There was no appearance of cancer about the preparation. The patient died of phthisis. She had on two or three occasions been seized with collapse and violent pain in the right side of the abdomen. The mucous membrane of the colon was found to be extensively ulcerated, although not in the immediate neighbourhood of the opening into the gall-bladder. This fact perhaps renders it doubtful whether the communication was or was not caused by the escape of a gall-stone. It is stated that the evacuations were very bilious and offensive during life. It is therefore at least possible that the entrance of bile into the colon may have been the cause of the ulcerated state of its mucous membrane.

Dr. C. Hilton Fagge, *3rd of March*, 1868.

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26. *Large hydatid tumour of the liver opening into the common bile-duct.*

Although it not uncommonly happens that an hydatid tumour of the liver opens into one of the small bile-ducts within the liver, the bile killing the parasite and causing suppuration of the cyst, it is not often that a large hydatid opens into the common bile-duct, so that the contents of the hydatid pass into and obstruct the duct, and cause jaundice. One of the most remarkable instances of this occurrence was recorded by me in a former volume of the Pathological *Transactions*, where a large hydatid of the liver discharged itself through the common bile-duct into the bowel, and where the patient made a good recovery, but died several months afterwards from peritonitis, excited by the rupture during vomiting of some of the old adhesions between the diaphragm and the liver. (See Vol XVI., p. 160.) The patient from whose body the liver which I now exhibit to the Society was obtained, sank under the constitutional disturbance, excited by the suppuration of the cyst. Few or none of the hydatid vesicles had escaped into the bowel by the bile-duct, the duodenal orifice of which was plugged by a large hydatid partially protruded into the duodenum. In the Museum of St. Bar-

* On Gastro-colic Fistula, Edin. Med. Jour., 1857-8, p. 4.

tholomew's Hospital (Series XIX., No. 12), there is a very similar specimen—an hydatid tumour of the right lobe of the liver opening into the common bile-duct, which is obstructed by hydatid vesicles, one of the vesicles projecting through the orifice of the duct in the duodenum.

On the 4th of February, 1868, I was requested by Mr. Ayling, of Great Portland Street, to see Mrs. C., aged 30, who was suffering from jaundice and enlargement of the liver. Her mother stated that ever since she had been fourteen, there had been a fulness in the epigastrium and left hypochondrium, but that with the exception of occasional pain after food and other symptoms of indigestion, she had enjoyed good health until her present illness. She had been married eleven years, and during that period the catamenia had been regular and she had had no children or miscarriages. Eighteen days before I saw her, she had been suddenly seized with severe pain in the back and upper part of the abdomen, which almost bent her double. This was relieved by warm poultices, etc., but was soon followed by pyrexia and four days later by jaundice, which soon became intense, with dark porter-coloured urine and a complete absence of bile from the motions. The fever continued; the swelling in the epigastrium and left hypochondrium was observed to increase, and the patient was so prostrate that some days before I saw her she was thought to be sinking; but she had no vomiting, rigors, or night sweats.

I found the patient much emaciated, and with deep jaundice of the conjunctivæ and whole surface of the body. There was a distinct tumour in the epigastrium, extending apparently into both hypochondria. It projected forwards fully an inch and a half beyond the natural level, and pushed forward the lower end of the sternum and the lower ribs on both sides, but particularly on the left. When the patient lay on her back, the lower margin of the tumour was one inch above the umbilicus. The tumour was evidently connected with the liver, the dulness of which in the mesial line was nine inches, in the right mammary line five inches, and in the left six inches. Posteriorly and laterally the hepatic dulness did not rise higher than natural on the right side, but on the left, posteriorly, it was fully two inches higher than on the right, and the dulness in the left axillary line was nine inches. The tumour, where it presented itself at the epigastrium, was rounded, smooth, and slightly tender. Distinct fluctuation could be felt in it, and a thrill, as from fluid, could be made out in the epigastrium when percussion was made over the dull part at the back of the left side of the chest. The tongue was very red and clean, with enlarged papillæ at the tip and the cen-

tre smooth and deeply fissured. The motions were clay-coloured, without a trace of bile-pigment. Pulse 108. Apex of heart elevated by tumour to between fourth and fifth ribs. Respirations 28, and slightly embarrassed, but pulmonary signs normal. Temperature 100°.6. Urine 1027, containing both bile-pigment and bile-acids, but no albumen.

The fact that the tumour contained fluid and had probably existed for years without giving rise to symptoms indicated hydatid; the acute pain, followed by jaundice with disappearance of bile from the stools, made it probable that this hydatid had communicated with and obstructed the main bile-duct; while the enlargement of the tumour with fever and great prostration was accounted for by inflammation of the tumour, consequent on the entrance of bile. This was the diagnosis.

On the following day the patient was admitted under my care into the Middlesex Hospital, and as her condition became daily more critical, it was determined to have recourse to puncture of the tumour, as holding out the only chance of safety. Accordingly, on the 7th of February, a fine trocar was introduced by Hulke in the left side of the epigastrium, and about six ounces of fluid drawn off. This was deeply tinged with bile and very fetid, and contained numerous pus-corpuscles and scales of cholesterine, but no hooklets or echinococci. On ascertaining the nature of the fluid, the small cannula was withdrawn, and a full-sized trocar substituted. Several hydatid vesicles escaped through the larger tube, but only about eight ounces more of fluid, although a probe could be passed in six or eight inches. It appeared, therefore, that the contents of the cyst consisted mainly of hydatid vesicles. A solution of carbolic acid (two per cent.) was injected into the cavity, and a large tube was tied into the wound.

During the ten days that followed the operation, several pints of the carbolic acid solution were injected three times a day through an elastic catheter passed into the cavity, and on each occasion large numbers of hydatid vesicles (with hooklets and echinococci in some) came away, with a fetid, purulent fluid, containing a large quantity of green bile. While this was going on, the abdomen returned to almost its normal dimensions, and the jaundice in a great measure disappeared from the integuments and urine, but the motions remained as light as before.

The patient had repeated doses of morphia after the operation, and for four days the pulse was about 108, the temperature was normal, and there was no very bad symptom, except the development on the tongue and inside of the mouth of numerous aphthous ulcers on a raised base, which caused excruciating pain whenever she took food or

drinks; but both the pain and the ulcers almost entirely disappeared from repeatedly washing out the mouth with Condy's "ozonized water." During the night of the 11th of February, the patient suffered from repeated rigors, and after this the pulse rose to 132 or 140, the respirations became quick, and the tongue dry; there was occasional vomiting, and the prostration rapidly increased. On the morning of the 18th delirium set in, and at six p.m. she died.

On opening the abdomen, the peritoneum contained no fluid, and there was no sign of recent peritonitis, but there were firm adhesions between the tumour and the diaphragm and the abdominal parietes in front. The left lobe of the liver had disappeared, and its place was occupied by an enormous hydatid cyst. This cyst contained about two pints of very fetid thick green fluid, with large fragments of the parent hydatid cyst lying loose in the cavity. It opened externally through the wound in the abdominal wall, while internally it communicated with the common bile-duct by an opening large enough to admit a full-sized catheter. On slitting open the duodenum, the orifice of the duct was found sufficiently dilated to admit a goose-quill, but obstructed by a large hydatid cyst, partly protruded into the duodenum. Between this and the opening into the cyst, the duct was distended with hydatid vesicles. The bile-ducts throughout the liver were greatly dilated, and the liver itself was very fatty and intensely jaundiced, with a tight-lace prolongation downwards of the right lobe. There was no trace of bile-pigment in the intestinal contents. The spleen was adherent to the tumour, but otherwise normal; kidneys healthy. There was recent pneumonia, at some places passing into the condition of grey hepatization of the back of the lower lobe of both lungs, and of the upper lobe of the right.

Dr. Murchison, *17th of March*, 1868.

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27. *Gall-stones from a sacculus of the common bile-duct, from a patient who died of peritonitis from rupture of the gall-bladder.*

The specimen consisted of a dozen polyhedral gall-stones, the largest about half the size of a cherry, composed internally of almost white cholesterine (about two-thirds), and externally of a crust (about one-third), of inspissated bile. These calculi had been removed from a large saccular dilatation of the common bile-duct. The patient was a lady, about 55 years of age, who had suffered much from mental anxiety, and who for some years had led a very sedentary life. About

five weeks before her death she had an attack of biliary colic and jaundice, from which she recovered, so that she was able to go about. A week before death the pain and jaundice returned; but there was no reason to apprehend danger until three days before death, when symptoms of acute peritonitis set in suddenly.

After death, in addition to the sacculus of the bile-duct containing gall-stones, a large quantity of bile was found in the peritoneum, and there were all the signs of extensive recent peritonitis. The bile had escaped by two ragged openings in the fundus of the gall-bladder, one large enough to admit the finger. There was extensive ulceration of the mucous membrane of the gall-bladder surrounding the opening, which had apparently been excited by the pressure of a gall-stone, about the size of a cherry, which was still in the gall-bladder. The cystic and common bile-ducts were patent.

Dr. Murchison, 21*st of April*, 1868.

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28. *Gall-stones discharged by a fistulous opening through the abdominal wall.*

There are nine gall-stones, of which the largest is of about the size of a hazel-nut. They have been discharged at intervals during the last eight months through a small fistulous opening in the abdominal parietes, a little above and to the right of the umbilicus, by a lady about 54 years of age. In the autumn of 1866, the patient suffered from an attack of gall-stones, and in February, 1867, what was believed to be an abscess of the liver, pointed below the right ribs and was opened. Nearly a pint of yellow pus, without any gall-stones or bilious tint, escaped. Pus and glairy mucus continued to drain away from the fistula resulting from this wound. The first gall-stone came away on the 28th of July, after considerable suffering. The others have been discharged subsequently, and there are probably more to come. The patient's general health and condition are good. Five similar cases have been already published in the *Transactions* of the Society:—one by Obre, in Vol. I., p. 272; one by Simon, in Vol. V., p. 156; one by R. Robinson, in Vol. V., p. 158; one by Everet, in Vol. XVIII., p. 120; and one by Taylor, in Vol. XVIII., p. 147.*

Dr. Murchison, 21*st of April*, 1868.

* Further details of the above case, and of this mode of termination of gall-stones, will be found in my Clinical Lectures on Diseases of the Liver, pp. 520—531.—C.M.

V. DISEASES, &c., OF THE GENITO-URINARY ORGANS.

A.—KIDNEYS, BLADDER, &c.

1. *Case in which the kidney was transformed into fat.*

James P., aged 10, admitted into St. George's Hospital, July 18th, 1867.

History.—The patient had suffered for twelve months from abscess in the right thigh; several pieces of dead bone had come away; the abscess never healed.

On admission, he had dropsy of the legs, and from an opening in the right thigh there was a free discharge of pus externally. The urine was of sp. gr. 1020, containing pus; fifty ounces was about the quantity usually passed during the twenty-four hours. No casts of the tubes were to be seen on examination under the microscope. He was treated with ordinary diuretics. On August 12th the dropsy had considerably increased, and he complained of pain in the back, in the right lumbar region. In two or three days a tumour appeared in this situation. This tumour soon became soft and doughy. The surgeon (Mr. Tatum) pronounced the spine to be free from disease. On September 8th, after continuing much in the same condition, diarrhœa set in; the patient gradually sank, and died on September 22nd.

Post-mortem examination, seventeen hours after death.—There was a large cicatrix of a wound on the external and posterior part of the right thigh, recently healed. The lower extremities were œdematous. A soft fluctuating tumour was felt in the right lumbar region, immediately over the kidney. On cutting into this, it was found to be a large abscess, burrowing among the muscles of the back. The right kidney was found to be almost entirely replaced by pure fat. One or two small sacs were found on tracing the ureter upwards, which were evidently the remains of the pelvis. At one part of this mass of fat a portion of true kidney-structure apparently remained; but on microscopic examination this part was found to consist of fibrous tissue, here and there convoluted after the manner of kidney-tubes. In the part just described as appearing to the naked eye to be unaltered kidney-structure several small cavities were found containing cheesy pus, and a communication was found between one of these and the abscess behind the kidney.

The opposite kidney weighed eighteen ounces. Under the microscope the tubes were found to be full of intensely fatty epithelium.

This kidney gave the "amyloid" reaction with solution of iodine. There is a specimen of a fibro-fatty tumour of the kidney in the museum of St. George's Hospital which weighed six pounds seven and a half ounces. It had grown at the expense of the kidney, but no remains of ureter could be found. On section it was found to consist of a network of fibrous tissue in meshes, among which were a large amount of oil-globules, and in this it differed from the kidney exhibited; for in the fatty mass by which this kidney was replaced no excess of fibrous tissue existed: it was pure fat.

In addition to the rarity of the disease, the fact of the patient having passed under the influence of diuretics so large a quantity as fifty ounces of water in the day seems a point of great interest, more especially when, as has been described, the opposite kidney, on which all the work must have fallen, was so extensively diseased.

Dr. WHIPHAM, 15*th October*, 1867.

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2. *Strumous pyelitis and tubercle in the prostate and testis and in the lungs, with lumbar abscess from disease of the vertebræ.*

W. S., aged 23, a bricklayer's labourer, was admitted into the Victoria Park Hospital on the 17th of July, 1867.

He stated that his illness commenced in the middle of April with profuse hæmoptysis followed by loss of strength, emaciation, shortness of breathing on exertion, profuse perspirations, and severe cough and expectoration. When admitted he was much emaciated, pale and sallow, had a poor appetite, thirst, a furred tongue, and quick, small pulse, with severe cough and expectoration and shortness of breathing. There was general deficiency of resonance on percussion over all parts of the chest, especially on the left side, where also there was some subcrepitation. The urine was found to contain a considerable amount of pus, and he had some pain in passing water. When a catheter was introduced it could not be passed beyond the prostate. He stated that about two months before his admission he had received a kick upon the groin and had experienced much pain at the time, and that his water afterwards became thick.

While in the hospital he obtained some temporary relief: the cough became easier, he was less troubled with perspiration and gained some little strength, and the quantity of pus in the urine diminished; but he again became weaker, complained of pain over the sacrum and

in the left groin, where also there was some tenderness and swelling, and he could not straighten the left leg. The abdomen also became tumid and tympanitic, and the epididymis was hard and enlarged, but not tender. He died exhausted on the 3rd of October.

The *post-mortem* examination was performed by Dr. Sutton. Adhesions of somewhat old date were found on both sides of the chest, and the lungs contained tubercle partly scattered, partly aggregated into masses; at the upper part of the left lung there was a small cavity with firm fibrous walls. The heart, pericardium, liver, spleen, and intestines were healthy, except that the liver was somewhat soft, and that there were two or three tubercles in the upper part of the ileum. The mesenteric glands were enlarged, but not otherwise diseased.

On the left side of the abdomen there was a large tumour extending from the under side of the lower ribs to the pelvis, and from the right side of the spinal column to the abdominal walls, and traversed in front by the descending colon and rectum. On cutting into this tumour it proved to be an abscess containing from one and a half to two pints of greenish pus. The abscess was bounded in front by the omentum and abdominal walls, and behind it rested upon the left kidney and on the spine, two or three of the bodies of the lumbar vertebræ being exposed, their surfaces rough and of a deep red colour, and their substance soft, spongy, and apparently carious, the intervertebral substance being also soft and gelatinous. Below, the abscess passed beneath Poupart's ligament, and penetrated among the muscles of the thigh, so as nearly to reach the skin on the posterior side of the limb.

The left kidney lay behind the abscess, and formed a portion of its posterior boundary. It was very large, and consisted of three or four soft fluctuating masses, which on section proved to be collections of pus, bounded by loose, yellowish-coloured tissue, but without any remains of the renal structure. There was no connection between these abscesses and the larger cavity in front of the kidney.

The ureter was very much thickened, but pervious throughout.

The bladder was healthy; the prostate gland was much enlarged, and contained two abscesses, one the size of a very small nut.

The left spermatic cord was hard, and the epididymis was enlarged and contained two moderately firm, yellow masses, each the size of a haricot bean. The structure of the testis was apparently healthy. The left kidney, ureter, spermatic cord, and testis were free from disease.

The case presents an instance of an extensive abscess originating in disease of the spinal vertebræ, combined with strumous pyelitis of one kidney, secondary abscess in the prostate, and tubercle in the epididymis of the same side. Dr. Peacock, *19th November*, 1867.

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3. *Epithelioma of the urinary bladder.*

W. B., aged 55, chimney-sweep, was admitted into the Middlesex Hospital under Mr. Nunn's care, January 10th, 1867, and died on April 10th following. Six years previous to admission he began to find the call to pass water frequent, and the act itself to be accompanied with some pain and difficulty, blood occasionally appearing in the water. Four months before he came under Mr. Nunn's care the pain became intense, especially at the end of the penis, so intense that the patient, thinking thereby to relieve it, cut off with his knife the glans and a small part of the body of the penis. Ophthalmitis had destroyed his eyes; his skin was freckled by the small sessile warts usually to be observed in chimney-sweeps; urine passed by the bowel, and fæcal matter exuded from the urethra. The patient's suffering was continuous, but liable to great aggravation on his taking solid food. Examination of the bladder by the sound *did not* give rise to bleeding. The patient sank from exhaustion.

The *post-mortem* examination showed the bladder to be the seat of extensive epitheliomatous disease, only the anterior third of the cavity being free from it. The posterior part was roughened and nodulated; at the junction of the healthy with the diseased region there was a prominent ridge of recent growth one quarter of an inch wide, and three lines deep, the surface of the ridge being marked by minute injected vessels; the floor of the commencement of the prostatic portion of the urethra was occupied by a reddish villous projection; a section through the ridge and this projection displayed under the microscope abundance of epitheliomatous "nests." On examining the rectum it was found that a communication had been established between the gut and the bladder about eight inches from the anus, above (consequently) the reach of the surgeon's finger. As regards the rest of the body, the kidneys were normal, as well as the other abdominal viscera; there was atrophous emphysema in parts of the lungs, and there was some atheroma of the aorta; the brain was normal.

Mr. Nunn, *19th November*, 1867.

Report by the Committee on Morbid Growths on Mr. Nunn's specimen of epithelioma of the bladder.—The specimen referred to the Committee consists of the lower and posterior portions of the bladder, to which is attached a piece of the large intestine; the latter appears to have opened into the bladder by a large orifice situated in the posterior wall of that viscus, but in consequence of the condition of the parts which have been preserved, it is impossible to express any decided opinion on the nature of the changes which have taken place. A large and ragged ulcer exists on the lower and posterior wall of the bladder, extending backwards from the posterior limit of the trigone for a distance of about two inches. The margins of this ulcer are very irregular and shaggy, but do not present any marked hardness nor induration. The floor of the ulcer seems to consist of the submucous and muscular coats which have been exposed by the destruction of the mucous membrane, and which present the ordinary microscopic characters of tissues undergoing an ulcerative process. Sections taken from the edge of the ulcer present similar characters, the mucous membrane, where it still remains entire, being prolonged into simple villous-like processes, but not presenting any evidence of the existence of a new formation. Cross sections of mucous follicles exhibit small groups of epithelial cells; but no such cells are found in other than normal positions, and no evidence exists of any epitheliomatous formation. A section taken from a part near the prostate contains in the deeper layers the ordinary concentric bodies (amyloid) of that organ.

The ulceration appears to have been of a perfectly simple nature; but the Committee do not wish to exclude the possibility of its having resulted from the destruction of a simple villous or papillary growth, of which, however, no evidence now exists in the specimen.

17*th December*, 1867.

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4. *Case of rupture of distended bladder without any history of external violence.*

Edward B., a strong, healthy-looking man, a railway-guard, had suffered from strictured urethra for some years. On the morning of September 8th, 1867, he could not pass his urine, and after going about his work for some hours he sought surgical assistance. The usual means of relief were tried, but without effect. After the retention had continued for nearly forty-eight hours, and two surgeons

had spent much time in vainly trying to catheterize the man, he was sent to the Middlesex Hospital, some miles, in a four-wheeled cab. On admission the man was delirious, very low, and evidently in much pain. A large globular swelling was felt, with dulness, over the pubes, as of a distended bladder reaching to the umbilicus. Being unable to get any instrument through the urethra, which was riddled with false passages, Mr. Lawson proceeded to tap the bladder through the rectum. Finding, to his surprise, however, that the only result was the release of some five ounces of urine mixed with blood, he withdrew the trocar, and inserted it again rather farther back, but with no better result—the swelling above the pubes remaining in the same state. The man was put to bed, and hot cloths applied, stimulants being freely administered. A small quantity of bloody urine escaped through the cannula, which was left in, but the patient sank after seventeen hours.

The *post-mortem* examination showed no trace of bruising of the integuments or of the abdominal wall, but the peritoneum in the lower part of the belly was lifted up by a mass of coagulated blood reaching nearly to the umbilicus. Just in front of the membranous portion of the urethra a tight bridle-stricture almost completely occluded the canal, which was studded with false passages in the anterior portion. The bladder itself was much thickened, moderately dilated, and at its upper and anterior part—the furthest point from the urethral orifice—was a rent an inch long and extending from before backwards, the edges of which were stained with blood, while there was further extravasation under and into the adjacent mucous membrane. There was no sign of ulceration of the membrane; but the wall, although much too thick, was somewhat thinner at this spot than elsewhere. The bladder was nearly empty, the parts around having a strongly ammoniacal odour. The rent did not extend through the serous coat, which seemed to have been lifted from the bladder at the torn portion. There was no peritonitis nor disease of any of the viscera. Microscopic examination showed much granular change in the muscular fibres of the bladder, with distinct groups of oil-globules at parts.

At the inquest very careful inquiry was made for any trace of injury, as a blow or squeeze, after the man first complained of the retention: but no evidence of the kind could be procured.

Remarks.—On *à priori* grounds it seems only reasonable to suppose that even a healthy bladder continuing to receive urine from the ureters while all outlet is stopped by closure of the urethra would

swell up to the limit of its resisting power and then burst; and this would be far more likely in the case of a bladder thickened and weakened by disease, and so rendered less expansile. Practically, one knows that the usual result is a dribbling away of surplus urine by the urethra during some days, whilst ulceration is taking place. But if the dribbling does not take place, what is to prevent the bladder from giving way at its weakest point, without waiting for ulcerative changes to set in? Mr. Samuel Cooper says that it is never so lacerated, "so equally is it supported by the pressure of the surrounding parts;"* and this supposed equal support is the only argument brought forward by those who attempt to explain the fact. But surely one cannot speak of the bladder as equally supported, pent in below as it is by the bony pelvis, while it rises above amidst yielding intestines of varying resistance as they are variously filled with faeces or gas—this fluctuating resistance being further changed with every respiration. That comparatively slight external violence will break an over-full bladder is a matter of common observation. Why then may not a cough or a hiccup equally cause rupture—especially when disease has rendered the wall brittle? And how is such a case to be distinguished from true spontaneous rupture from over-distension? That no such case has hitherto been recorded is no doubt a strong, but by no means an insuperable reason against the possibility of the accident.

It is noteworthy in the present instance that, although unusual aid was afforded for obtaining a complete history of the case—for at the inquest many witnesses were examined, including the man's wife, with the special object of showing that some blow or fall had been sustained—yet no evidence appeared which supported such a supposition. The man had indeed complained freely of his pains, but had said nothing of any injury to which he attributed them. The only conceivable source of mischief to which I can point is the long jolting journey in the cab to the hospital after the surgeons in attendance had failed to introduce a catheter. But if the lesion had occurred at this time it is surely almost certain that some expression of relief or collapse would have accompanied the accident.† Negative

* *Dictionary of Surgery*, 6th edition, p. 226.

† Writing this since the discussion which attended the exhibition of the specimen, I may venture to notice one other source alluded to on that occasion. It was suggested that the surgeon puncturing the bladder by the rectum had at the same time caused the other lesion. This explanation, highly improbable in itself, is moreover

evidence is indeed never very satisfactory; but it is all that one can expect in such a case as the present. The *post-mortem* evidence alone, however, is nearly conclusive. A ragged rent with blood-stained edges (not extending through the peritoneal covering, as might have been expected in the case of external injury) in the thinnest and probably least supported part of a fatty, brittle bladder, effused blood and urine into the surrounding cellular tissue to a very large extent, no sign of ulceration, and with all this, no bruise of the skin nor ecchymosis in the abdominal wall, must surely point rather to spontaneous bursting than to rupture from external injury. It is at least only proper to put the case on record.

The parts are now in the Middlesex Hospital Museum.

Mr. Henry Arnott, *19th November*, 1867.

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5. *Case of Bright's disease; one kidney large and white, the other normal; the renal artery leading to the latter plugged by an old coagulum.*

The specimen exhibited consisted of the kidneys from a female patient, aged 34, who died in Guy's Hospital of cardiac and renal dropsy. Some years previously she had had rheumatic fever, and after this she had suffered more or less from breathlessness on exertion; dropsy came on about a month before her admission. She stayed long in the hospital, but on one occasion was very nearly dying from uræmic convulsions, which lasted several hours. She, however, recovered, and lived some three months after, suffering much during that time from irritability of the stomach and dyspnœa, the dropsy increasing to a very severe degree.

On inspection, the heart was found dilated and disproportionately thin; its left ventricle was chiefly affected; the cavity of this contained the recesses between the columnæ carneæ many large *ante-mortem* "polypi" of old date, generally quite softened down at the centre. The left valves were thick, but not altered in outline. Some

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inconsistent with certain facts, viz., (1) the rent was a ragged one, an inch long, such as no trocar could readily make; (2) the position of the tear in the distended state of the viscus, above the pubes, near to the belly-wall, would be quite out of reach of any ordinary trocar; and (3) the operation was attended by no special symptom, nor by any change in the local signs—dulness, resistance, &c.—which were the same at the time of the patient's death as on his admission into the hospital.

surprise was occasioned by finding that a unilateral Bright's disease existed. The right kidney was large and pale, with a finely mingled "granular" appearance, having indeed all the characters of the large white kidney of Bright. The left, on the contrary, was rather small, and of the colour and appearance of a healthy kidney. Microscopic examination of the texture of the two kidneys fully supported the conclusion from their immediate appearance; the larger was greatly diseased, the smaller practically healthy. The other organs were in the usual conditions found in cardiac dropsy. In searching for the cause of the unusual difference in the kidneys, the aorta was opened up, and then it was seen that the left renal artery was stopped up by a plug which did not project into the aorta, but stood at the level of its wall; it was closely adherent to the wall of the renal artery, and covered on the aortic side with a membrane. Evidently it was of very old date. The plug was about half an inch long, and the distal branches of the artery were empty.

In passing, it is worth remark that a clot should have been lodged in the mouth of the renal artery, for it does not bear a large proportion to its parent trunk and it proceeds from it at a right angle, so that one would scarcely think that a mass large enough to close it up would turn into it.

But the chief interest of the case lies in the comparison of the two kidneys; the one is in a state of advanced degeneration, being in the condition known as the large white kidney of Bright, while the other is nearly healthy—indeed as nearly healthy as the ordinary run of healthy kidneys, which are never, or very rarely, found to be in all parts perfect. It is difficult to escape from the conclusion that the plugging of the renal artery had a beneficial influence upon the corresponding kidney; for, whereas Bright's disease is always symmetrical, in this case one kidney only was affected, and the only cause of the freedom of the other kidney was this plug in its artery. The exhibitor expressed his belief that the action of the plug had been curative—that in consequence of its having diminished the supply of blood to the diseased kidney, the disease had moderated and ceased, and he regarded the case as an example of cure by rest from function; an example, indeed, very peculiarly suited to illustrate Mr. Hilton's strong view of the importance of functional rest to the cure of diseased organs. As an alternative view, the free kidney might be thought to have become more diseased through the excess of function forced upon it by reason of the cessation of the other from its work. This view is

not, however, an alternative, but rather adds to the force of the example, in so far as it goes to show that an addition to the function of an inflamed organ adds to the disease in it, just as a lessening of its function takes from the disease.

What needs explanation is not the disease of the diseased organ, but the sound state of the healthy organ. Three views may be held as to the course of the changes.

1. Both kidneys may have been equally diseased, and the plugging of its artery have cured one.

2. Both may have been healthy, and the plugging of one have diseased the other by stress of function.

3. Both may have been in a state of minor disease, and the plugging of the artery of one have exaggerated the disease in the other.

The second proposition (which, however, is not contradictory to the course of the succeeding argument) is open to this objection, that we already know the result of stoppage of function in one kidney, and it is not Bright's disease of the other, but rather a simple hypertrophy of it; and one is scarcely justified in assuming an unusual result under equivocal circumstances. The first and third propositions are not contrary to each other. The plugging which saved the one may have damaged the other, and, indeed, have saved the one at the expense of the other. But if it continued to keep in health an organ that tended strongly and continuously to disease—as must be the case in either kidney in Bright's disease of the other—then its efficacy as quelling a diseased tendency in the kidney by keeping down the function of that kidney stands as near proof as if the same plugging had had no relation to the other kidney at all; and its relation to the other kidney puts the state of that kidney, so far as its functional excitement augmented its disease, in the light of an example of a complementary sort, showing that excess of function augmented disease, as the state of the plugged kidney shows that diminished function decreased disease. Dr. Moxon, 17*th December*, 1867.

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6. *Renal calculi of carbonate of lime in several different forms.*

The specimen was removed from a male patient of Dr. Goolden's, in St. Thomas's Hospital, aged 42, who died thirteen days after admission with symptoms referable to heart disease. There was a good deal of anasarca, and his urine was slightly albuminous, but

otherwise healthy. The only history connected with the renal calculus was that two months before admission into hospital he had passed some blood with his water, and this had continued for two or three days.

After death the right kidney was found to be greatly dilated in its upper half from obstruction of its pelvis by a large branching calculus. This calculus was of a dark-brown colour, and apparently laminated in this position; but those portions of it which jutted out freely into the calices were colourless, and, where not opposed to other loose calculi, presented a beautiful crystalline semitranslucent surface. There was also a large quantity of fine calculous brown sand, and several rounded loose calculi of various sizes lay in the calices.

It appeared as if five different forms of deposit existed here, when first examined with the naked eye.

1. That in the pelvis, which was of a dark-brown colour and very hard, and closely resembled uric acid in appearance.

2. That in the calices, generally smooth from pressure, but, in one of the sacculi, where not exposed to pressure or attrition, apparently made up of large, shining, white crystals. This was easily cut with a knife, and had rather the appearance of triple phosphate.

3. The small calculi, smooth, hard, and laminated.

4. Some of the free ends and some of the isolated calculi were covered with a dry, soft, opaque-white, pulverulent deposit, looking very much like phosphate of lime.

5. The small calculous grit, existing as little brownish spherules, very hard, and identical in appearance with uric acid. These proved on further examination to be laminated, and formed very striking microscopic objects.

On examining each of these kinds carefully, with the assistance of Mr. W. Moore and Mr. Stewart, it was found that, without exception, they were composed almost exclusively of carbonate of lime, with a slight trace of phosphate, but no uric acid. By the addition of dilute hydrochloric acid a copious evolution of gas occurred in each instance, leaving in the case of the laminated spherules an animal matrix resembling the original spherule.

The specimen is exceedingly rare, I believe, as I can find no record of carbonate of lime forming a renal calculus; and the close resemblance between the laminated spherules and those frequently found in the prostate is worthy of notice.

The other *post-mortem* appearances in this case were hypertrophy,

and dilatation of the left side of the heart, nutmeggy liver, and abscesses in the tongue and tonsils.

Mr. W. W. Wagstaffe, 17*th December*, 1867.

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7. *Malformation of genito-urinary organs; intestine terminating in the bladder.*

The infant was brought to Dr. Phillips, after death, by one of the students of Guy's Hospital, from a case of labour at the full period of pregnancy which he had attended.

The child had lived for thirty-six hours, but during that time there had been but little urine passed, and it was noticed that no anal aperture existed.

There was no history of any hereditary malformation. The body of the child was well nourished, and on examination presented a thickened pouch in connection with the under surface of the penis, which before dissection had somewhat the appearance of a scrotum, but which was found to be a dilatation in the course of the urethra, furnished with comparatively thick muscular walls.

Fluid meconium escaped by the meatus when pressure was made above the pubes and in the course of the urethra. The large intestine terminated in the bladder by an aperture situated between the orifices of the ureters.

The pelves of the kidneys and the ureters in their whole course were greatly dilated.

A probe passed from the bladder along the urethra entered the above-mentioned dilatation, which was situated two inches from the bladder, and from which the urethra was continued of normal calibre to the meatus, a distance of about half an inch. This pouch was an inch long, and two inches in circumference, and was lined by a continuation of the mucous membrane. The testicles were situated in the inguinal canals, and the scrotum was represented by two folds of skin, placed one on each side of the urethral dilatation. All the other organs of the body were normal.

Dr. J. J. Phillips, 17*th December*, 1867.

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8. *Illustrations of the waxy, amyloid, or depurative disease, as affecting the kidneys.*

A collection of water-colour drawings, made during the last six years as opportunity offered, illustrating the changes produced in the size, shape, and colour of the kidneys by the disease in question, was exhibited to the Society. Some of the kidneys represented were larger than natural, some smaller; some had level, some undulating surfaces; some were smooth, some rough. In vascularity, colour, and translucency, great differences were observed.

The external changes produced by the disease were shown to depend partly upon its duration and partly upon its complications. The disease, depending as it does on the deposition of new material in the walls of the vessels and outside them, is attended at the outset with an increase of bulk. The portion of the new formation, however, which lies outside the blood-vessels, as loose, closely nucleated, fibroid structure, condenses into a firm, close, fibrous tissue, and compresses the glandular elements, puckers the surface, and eventually diminishes the bulk of the organ.

The longer the disease lasts, the greater the contraction becomes; and the instance was adduced of a long-standing case, the result of phthisis, in which the two kidneys (being those of an adult male) weighed seven ounces, and were of the type which has been described as the small, smooth kidney. Contrasted with this was a kidney which with its fellow weighed thirty-three ounces, in which the "amyloid" change was associated with fatty degeneration of the epithelium and distension of the tubes.

Great differences were shown in the condition of the surface. Some specimens were perfectly smooth. These were in an early stage of the disease, before contraction had commenced. Others were covered with elevations and depressions of the most various size and character. As each depression which appears on the surface is the outward and visible sign of a contracting growth within the organ, the position of the depressions, or, in other words, the size of the elevations, is an index of the distribution of the contractile formation. And in this disease the distribution of this formation is exceedingly variable.

In one case, where the surface was covered with large smooth bosses, there were found to be widely separated patches of the new growth, each of which was seen in section, underlying the valley between two prominences. In other cases, where the surface presented

a granulation as minute as that of herring roe, or even like sand, the internal changes were spread with corresponding uniformity through the organ.

In colour and translucency the kidneys presented much variation. Where the "amyloid" change was extensive and unmixed with alteration in the epithelium or with distension of the tubes, the cortex had the characteristic transparency which has suggested the term waxy, and often presented a pinkish tint. Where the tubes were packed with epithelium, the colour of the organ closely resembled that which results from simple nephritis.

The most characteristic peculiarity in the naked eye appearances of organs so affected is the transparency described. The next is a very visible change in the Malpighian bodies, by which they become sparkling and conspicuous, like little fragments of glass. In the absence of these characters the disease can only be recognized by the action of reagents, of which iodine is the most ready and sure.

Dr. Dickinson, 7*th January*, 1868.

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9. *Cystic disease of the kidneys.*

The organs were removed from the body of a woman, Susan J., aged 40, who was admitted into St. Bartholomew's Hospital in a state of partial coma, and died soon after admission.

Both kidneys were converted into mere masses of small cysts, the contents of which were of various colours—straw-coloured to black. The weight of each was nineteen and a half ounces.

Three years before her death she had had an attack of hemiplegia, from which she never recovered. Five days before her death she had a fit, and a second one just before admission. There were traces of old hæmorrhage into the brain-substance, and the right hemisphere was partially softened. Dr. W. S. Church, 21*st January*, 1868.

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10. *Abnormal (single unsymmetrical) kidney.*

This specimen was taken from the body of a woman who died in King's College Hospital, under the care of Dr. Johnson.

No kidney could be found on the left side, nor anything like the remains of one; on the right side was a very large kidney, weighing

ninety-three ounces, lying vertically along the spine, with a convex outer border; on the inner border, three arteries entered, all arising from the aorta at about an inch apart, the upper vessel being in the usual position of the right renal artery; there was no corresponding vessel on the left side of the aorta.

There were also three veins, which entered the vena cava close together. The ureters were two in number; the upper one descended in the usual manner, and was the most anterior in position of all the vessels; the lower one, after passing behind it, followed the course of the left common iliac artery, and then, dipping downwards just inside the commencement of the left external iliac artery, entered the bladder in the usual position.

No other viscera were misplaced; no tumour was felt during life, although the lower border of the kidney was on a level with the umbilicus, and might have been noticed in a thin person; but in this case, as there were no symptoms referable to the abdomen, attention was not drawn to the part. Dr. C. Kelly, *4th February*, 1868.

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11. *A case of xanthic oxide calculus.*

At the suggestion of the President that a description of the xanthine or xanthic oxide calculus found by me about two years since in the Museum of the Royal College of Surgeons would be of interest to the members of the Pathological Society, I have drawn up the following; and I only regret that, owing to the small size of the calculus and its great rarity, I did not feel justified in submitting it to further chemical examination than was sufficient to identify it.

This calculus, of which the College possesses one half, the other being probably in the Museum of Guy's Hospital, was presented to the College in 1851 by the late Mr. Bransby Cooper, and was described by him in the *Guy's Hospital Reports* for 1851, as "*consisting of a peculiarly red-tinted uric acid, mixed with urate of ammonia, and containing layers of oxalate of lime, with traces of earthy phosphates.*"

It consists, however, of nearly pure xanthine, *xanthic*, or *uric oxide*, and its general appearance and structure closely resemble the description given of these calculi by their discoverer, the late Dr. Marcet. When entire it weighed ninety grains; it is made up of three concentric layers, closely aggregated, so that its cut surface presents a compact texture, and it breaks with a conchoidal fracture. It

possesses the peculiar flesh or reddish cinnamon-tint which seems to be characteristic of these concretions. Its nucleus is, however, of a yellow tint; but I could not detect the presence of uric acid in the nucleus. Immediately around the nucleus is a thin, slate-coloured layer, resembling urate of ammonia. The external surface is slightly rough, and of a light brown, or coffee colour.

This stone had been given to Mr. Cooper by Mr. George Coles, a surgeon in the service of the East India Company, and was extracted by him from the bladder of a Mussulman child, aged four years. The following memorandum was sent with the stone. "Ordinary symptoms of stone; calculus easily detected. The patient appeared to suffer a great deal of pain during the operation; bladder contracted violently; the stone was not easily seized; operation lasted twenty minutes. The child rapidly recovered."

Since the discovery of this species of calculus in the year 1817, only two other specimens have been placed upon record, namely, that extracted by Professor Langenbeck from the bladder of a Hanoverian peasant boy, and the present specimen. A portion of Langenbeck's calculus was presented to the College of Surgeons through the kindness of Dr. Marx and Dr. Willis. No trace of the original calculus discovered by Marcet can now be found.

The close similarity in composition which exists between uric oxide and uric acid would lead to the conclusion that these substances might frequently be found mixed together in the same calculus. I have, however, submitted to careful examination several uric acid calculi, which from their external characters might be supposed to contain xanthine, but hitherto without success. Through the kindness of Mr. Flower, the Conservator of the College, I am enabled to exhibit the calculus. Mr. Thos. Taylor (*in a communication to the President*), *3rd March*, 1868.

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12. *Case of very large vesical calculi.*

C. C., railway-clerk, aged 42 years, has had symptoms of stone in the bladder for twenty-five years. Twenty-five years ago he was sounded for stone by Mr. Jeaffreson, of Framlingham, in Suffolk, and also by Mr. Buck of Ipswich, but it is doubtful whether any stone was at that time detected by either of these gentlemen. From that period he has suffered most severely from the symptoms of stone, to relieve which, he has been constantly in the habit of drinking gin mixed with

beer. This strange mixture, he affirmed, was the only remedy which gave him relief from his frequent torture. Up to a very recent date, he could not be made to believe that his sufferings arose from stone; and it was owing to his consulting Sir Henry Thompson, who sounded him and proved to him the nature of his malady, that he was convinced that such was the case. About three months ago the patient applied to Dr. Walker, of Essex Road, Islington, complaining of irritation about the bladder and difficulty in passing water. Dr. Walker proposed passing an instrument, but this proceeding was objected to; and the doctor lost sight of his patient till March 4th, 1868, when he again sent for Dr. Walker and told him that he could no longer endure his sufferings, and also that he had been sounded by Sir H. Thompson, who had given his opinion that an operation should have been performed ten years earlier.

On the 4th of March, to relieve the urgent symptoms, $\frac{1}{8}$ gr. of morphia was prescribed, with hot fomentations and poultices to the region of the bladder. The morphia was repeated three times, and after the third dose the patient expressed himself free from pain, and thanked the doctor for the great relief he had given him.

On the 5th the following symptoms arose:—A stupor from which he could be aroused by exertion; tongue dry; pulse 120.

6th. Patient passed a fair night; bowels acted twice in the night; large quantity of blood and pus in the urine; pulse still 120; tongue dry: to take dilute hydrochloric acid with infusion of buchu.

7th. Urine clear, and pulse 120; tongue dry; patient free from pain.

8th. Pain in region of right kidney, followed by muscular twitchings and tympanitis; drowsiness.

9th. Comatose, and died at 8 P.M.

The bladder was found to be contracted upon three calculi. (See Plate IX.) Its mucous membrane was destroyed and ulcerated.

The first stone weighs $\frac{3}{4}$ lb., less 20 grains; the second $\frac{1}{2}$ lb., less 40 grains. The third stone is smaller, and weighs 40 grains. The total weight of the three stones is $1\frac{1}{4}$ lb., less 20 grains. Externally, the stones appear to be composed of triple phosphate; but they have not been cut into. The concavity of the second stone was found resting against the pubes.

The *post-mortem* was with great difficulty obtained by Dr. Walker, and there was no time for any communication with Sir H. Thompson to be made relative to it.

The foregoing description has been copied from Dr. Walker's notes of the case. Dr. Augustus Brown, 17*th March*, 1868.

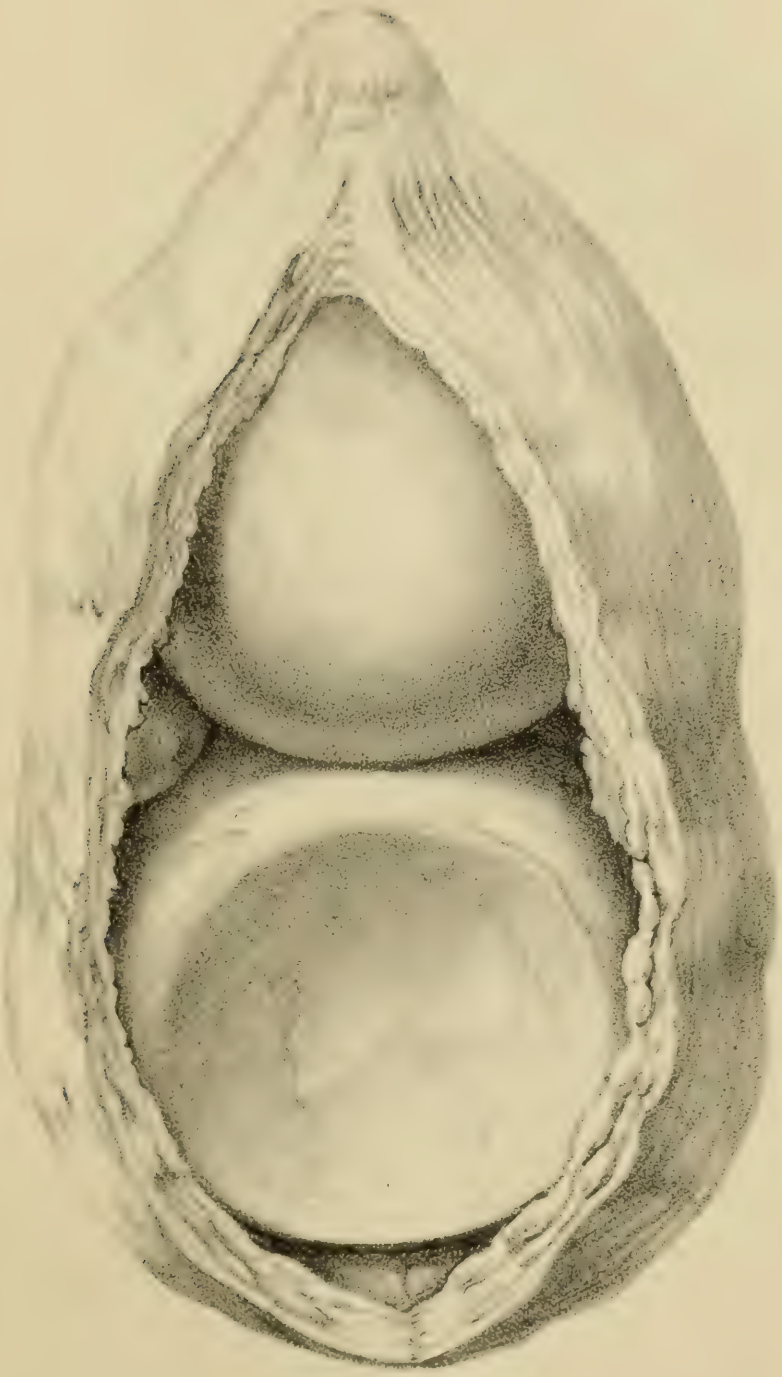
13. *Calculous pyelitis from a patient who passed a large quantity of cholesterine and pus in the urine.*

William H. W., aged 54, a collector, was admitted into the Middlesex Hospital under my care on February 20th, 1868. He stated that when only two years of age he fell off a table and hurt himself severely and brought up blood. From that time till he was 18 years of age, he used to suffer pain in his left loin, and to pass blood in his urine after any violent exercise, or if he caught cold or got wet feet. During the next twenty-two years he enjoyed comparatively good health, although he had some symptoms of irritability of the bladder, and used generally to get up to pass water twice during the night. At the age of 40, he noticed that his urine frequently deposited yellow matter; and about a year after this he began again to pass blood occasionally. He continued to pass blood in his urine from time to time until five months before admission, since which time the urine had scarcely been a day without blood. For the last two or three years he had been obliged to get up seven or eight times in a night to make water. For five months he had been losing strength rapidly; and ten days before admission an eruption appeared on his nose and upper lip.

On admission, the patient was emaciated, and had a scabbing pustular eruption, with much surrounding redness and swelling, on the nose and upper lip. The veins of the legs were varicose; but there was nowhere the slightest sign of anasarca. His chief complaints were weakness and frequency of micturition. He had to get up to pass urine seven or eight times every night. He had also pain in the region of the bladder before micturition; but this did not appear to be very severe, and there was no marked tenderness on pressure above the pubes. There was tenderness in the region of the left kidney, but nothing like a tumour could be felt. The urine was of a dark-brown colour and very fetid, and deposited on standing a copious gelatinous sediment, composed of pus and blood, and very numerous crystalline scales of cholesterine, but no triple phosphate crystals or bile-pigment. The tongue was dry and brown down the centre, and the patient's breath had an offensive, ammoniacal odour; he stated

DESCRIPTION OF PLATE IX.

This Plate represents the Specimen of Enormous Vesical Calculi exhibited by Dr. Augustus Brown (p. 276).



himself that the discharge from his nose smelt like hartshorn: he had no appetite; his bowels were regular. The pulse was 108, and feeble; the cardiac and respiratory signs were normal. The temperature was 98° Fahrenheit. The patient was restless and fidgety, and his mind seemed slightly confused.

The patient was ordered a draught every four hours, containing half-a-drachm of bitartrate of potash and half a fluid drachm of nitric ether. He had also a warm bath, a purgative, four ounces of wine, milk and eggs. At first he seemed to improve, but on the morning of February 23rd he was noticed to be very drowsy, and at 10·45 A.M. he had a violent fit of convulsions, lasting for twenty minutes, and followed by coma. Cathartic enemata, ice to the forehead, and sinapisms to the feet and nape failed to rouse him. In the evening he had slight convulsions when a catheter was introduced, and at 10·20 next morning he died, comatose.

The urine was examined daily while the patient was in the hospital, and always presented the same characters as on admission, except that on the last occasion there were crystals of triple phosphate as well as cholesterine. The surface of the urine glistened with the scales of cholesterine, which presented the typical rhomboidal shape with a small portion as if snipped out of one angle.

Autopsy.—There was neither stricture of the urethra nor enlargement of the prostate; the mucous membrane of the bladder seemed tolerably normal, and the orifices of the ureters were not enlarged. Both ureters were very slightly dilated, but both kidneys were enormously enlarged and sacculated. The right, which was the larger, was about the size of a child's head, and on cutting into it there escaped many ounces of pus glistening with scales of cholesterine. All trace of the secreting tissue had disappeared, and the organ was made up of large sacs corresponding to the dilated calices and communicating with the dilated pelvis. The upper end of the ureter was in a great measure, but not entirely, blocked up by the lower end of a calculus one inch and a half long, which was mainly imbedded in one of the sacculi. Another smaller concretion was lodged in another of the sacculi. The left kidney was also very large and sacculated, and expanded over it was a thin layer of the remains of the secreting tissue. On cutting into it, the pelvis was found filled with an enormous concretion, sending branches into the different sacculi, some of which were broken off and lying loose in the sacculi. One of these fragments, about the size of a large filbert, was of a snow-

white appearance, and composed of glistening satiny scales, like spermaceti; but on chemical analysis by Dr. Marcet it was found to be composed of triple phosphate with a small quantity of phosphate of lime, and to contain no cholesterine. The pus, moreover, in the left kidney contained no cholesterine.

There were about two ounces of clear serum, which contained urea, in the lateral ventricles and at the base of the brain. There was no peritonitis, pleurisy, or pericarditis, and the valves of the heart were healthy, and likewise the liver and spleen. The lungs also were healthy, with the exception of considerable œdema and hypostatic congestion.

Remarks.—In so far as concerns the passage of a large quantity of cholesterine in a crystalline form in the urine, this case, to the best of my knowledge, is unique. Most authorities, such as Lehmann, state that cholesterine has never been found in the urine. Dr. Beale has described and figured cholesterine obtained by chemical analysis of the urine secreted by kidneys in a state of fatty degeneration, but the cholesterine in these cases is not passed in the crystalline form, and is always dissolved in other fatty matters.* Gmelin also is said to have found cholesterine in the urine in a case where the flow of bile was impeded, and Möller twice detected it in kiestein of the urine of pregnant women, which sometimes contains much fatty matter; but in these cases it is not stated that crystals were obtained, even after the use of chemical reagents.† The inference drawn from the presence of the cholesterine and pus in the urine of this case was that an abscess communicated with some part of the urinary passages; and although after death no abscess, such as was expected, was found, the right kidney, from which alone the cholesterine seemed to come, was very much in the condition of a chronic abscess, all its secreting tissue having been destroyed, and the opening of the ureter being partly blocked up by a calculus.

Dr. Murchison, 17*th March*, 1868.

* *Archives of Medicine*, 1857, vol. i. p. 8, and *Use of the Microscope in Clinical Medicine*, No. ii. 1857, Plate xviii.

† *Archives of Medicine*, loc. cit.

14. *Granular degeneration of kidney—the result of malnutrition from malformation of the renal artery.*

The kidney was taken from the body of a man, aged 48, who died of pleuro-pneumonia. It may be mentioned that during life the urine was albuminous and contained pus.

The kidney, the right one, is extremely small, weighing only six drachms, and is in an advanced stage of granular degeneration; its capsule is adherent and splits into layers; there are numerous cysts in its substance, and the secreting structure is much diminished. The right renal artery, instead of passing to the kidney, as it usually does, terminates about an inch from the aorta in a cul-de-sac, from which are given off two minute branches, scarcely large enough to admit a probe, and from these two little vessels the kidney obtains its whole vascular supply. The left kidney is very large and congested, weighing twelve ounces, and has evidently been doing the work of both. The ureters and bladder are natural.

Remarks.—The term "granular degeneration" is used in regard to this specimen advisedly, as denoting a diseased state of the organ, and not a simple atrophy. Both the naked-eye appearances and also the microscopical examination show that this kidney had undergone true granular degeneration. The case is, therefore, of interest, as throwing some light on the pathology of general fibroid degeneration. It is known that one of the tendencies of old age is to an increase in the amount of fibrous tissue in different parts of the body, and to general fibroid thickening; the cause, however, of this change is not clear. In the case before us we have the same condition arising from an obvious cause; it is fair, therefore, to assume that the fibroid degeneration of old age, as well as that less general fibroid thickening of drunkards, is simply due to a deficient supply of blood, either in quantity or quality. Mr. Thomas P. Pick, *5th May*, 1868.

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15. *Case of diphtheritic inflammation and gangrene of the bladder and ureters, preceded by symptoms of renal calculus.*

James McW., aged 42, a coachman, was admitted into the Middlesex Hospital under my care on October 15th, 1867. He had been in the habit of drinking a good deal of spirits and malt liquor,

but his previous health had been good, except that for three or four months he had complained of slight pain in the back, which he believed to have been rheumatic, and he thought that during the same time he had been getting thinner. He had never noticed any symptom of urinary disturbance. On the night of October 11th, he went to bed in his usual health, and at two A.M. on the following morning he awoke with acute pain in the right loin, shooting down to the testicle and bladder, but not down the legs. This pain prevented him going to sleep again, and was accompanied by frequent rigors and almost constant vomiting. Next morning, he noticed that his urine was dark, like porter; and several times between that time and the date of admission, the urine had stopped suddenly while being discharged in a full stream.

On admission the patient was very prostrate and apparently in much distress; he had great pain and tenderness in the region of the right kidney, and passed urine very frequently. The urine was dark brown, and had a very fetid, gangrenous odour; its specific gravity was 1020, and it contained both blood and albumen in large quantity, but no casts of the renal tubes. No stone could be felt on sounding the bladder. There was no anasarca. The pulse was 108; there was still frequent vomiting, with restlessness and inability to sleep. After the patient had been in the hospital for a few days, numerous large masses of thick white membrane of a gangrenous odour were found in the urine, which microscopically were found to contain epithelium cells and nuclei, blood-corpuscles, and fibrillated tissue. More or less of this appearance was present in the urine until the patient's death.

The treatment consisted in morphia suppositories and warm hip-baths, washing out the bladder with a solution of carbolic acid, alkalies, tonics, and support. At first the symptoms improved, but on October 26th, after the passage of a catheter, the patient had a severe rigor, lasting for an hour, followed by pyrexia, the pulse rising from 84 to 108, and the temperature from the normal standard to 101·8° Fahr. At the same time the tongue became dry and brown, and delirium, with subsultus and other typhoid symptoms, gradually set in. The symptoms differed from those of a simple case of uræmia in the high temperature, in the frequent occurrence of rigors—which, however, were mainly determined by the carbolic-acid injections thrown into the bladder—and in the skin being mostly in a state of moderate perspiration and slightly jaundiced. No improvement took

place; and death occurred in the morning of November 7th, being preceded by a slight attack of convulsions.

The diagnosis in this case was that inflammation and gangrene of the ureter and bladder had been excited by the pressure of a urinary calculus, and that death was due to blood-poisoning—a combination of uræmia and pyæmia.

The *post-mortem* examination disclosed evidence of both uræmia and pyæmia. In the first place, a considerable amount of nitrate of urea was obtained from the fluid of the cerebral ventricles; and secondly, after removing the sternum, an abscess the size of a walnut was found in the anterior mediastinum, and there was a second abscess in the abdominal parietes of the right groin, extending down towards the bladder, but external to the peritoneum, besides pyæmic abscesses in the left kidney. On proceeding to examine the source of the disease, the urethra was found to be healthy and nowhere constricted. There was no enlargement or disease of the prostate. The bladder was contracted, but its coats were not more thickened than might be accounted for by the contraction, and there was nowhere any appearance of morbid deposit. The inner surface of the bladder was black and rough, and appeared at many places devoid of mucous membrane; its cavity contained several ounces of dark, very fetid, purulent fluid, with large white membranous shreds. But the most remarkable feature about the bladder was the large size of the opening of the right ureter, which admitted the end of the forefinger readily, and measured one and a quarter inch in circumference. The whole of the right ureter was enormously dilated, and resembled a piece of bowel, measuring from two and a half to three inches in circumference. Its coats were thickened, and its inner surface was in much the same state as that of the bladder, except near the upper end, where there was an adherent, sloughy mass, as large as a half-crown piece and a quarter of an inch thick. Like the sloughs in the ileum in certain cases of enteric fever, it presented a fungating appearance from being infiltrated with blood. The right kidney was dilated and sacculated, and its secreting tissue was entirely gone. The opening of the left ureter into the bladder was slightly larger than natural, and the left ureter was dilated, although much less so than the right. The inner surface of the left ureter and the calices of the left kidney (which were also slightly dilated) were coated with loosely adherent thick patches of diphtheritic membrane, similar to the membranous shreds passed in the urine during life. The left kidney was fully

twice the normal size; its secreting tissue was studded with numerous small recent abscesses, but in other respects appeared normal. There was a large abscess encircling the lower end of the right ureter, and extending down between the bladder and rectum, and up to the crest of the right ilium, but communicating nowhere with the ureter or bladder. The lungs were congested and œdematous, but there were no purulent deposits either in them or in the liver.

No calculus was found in either of the kidneys, in the bladder, or in any portion of the urinary passages; but the supposition that there had been a calculus seemed to offer the only rational explanation of the extraordinary appearances met with after death.

1. The enormous dilatation and thickening of the right ureter, the sacculation and destruction of the right kidney, and the complementary hypertrophy of the left kidney, all pointed to some obstruction of long standing in the urinary passages of the right kidney.

2. This obstruction could not have been in the urethra, or it would have equally affected the left kidney, and moreover the urethra was found to be perfectly healthy. There was no evidence of disease in the bladder which could have obstructed the orifice of the right ureter; and yet, from the ureter being dilated throughout its whole course, it is clear that the obstruction must have been at its lower end.

3. The extraordinary enlargement of the orifice of the right ureter in the bladder is less opposed to the view that this may originally have been the seat of obstruction, than might at first be imagined. It is well known that a comparatively small calculus will sometimes suffice to produce permanent obstruction of the lower end of the ureter, with dilatation of the urinary passages and destruction of the kidney above. If we can suppose that a calculus, after having produced these results, should find its way by ulceration and sloughing into the bladder, it would account not only for the appearances met with in the right kidney and ureter, but also for the extraordinarily large size of the orifice of the right ureter in the bladder, for the abscess encircling the lower end of the right ureter, for the symptoms of renal colic with which the patient's illness commenced, and for the inflammation and gangrene of the bladder spreading up the left ureter.

4. It is quite possible that a calculus large enough to obstruct the lower end of the ureter should have been voided by the patient *per urethram* before his admission. It so happened, that while this patient was under observation in the hospital, another man in the same ward

passed a flattened oval calculus by the urethra, whose three diameters measured six, four and a-half, and three lines respectively.

The diphtheritic character of the inflammation of the left ureter, which had probably also existed in the bladder, although all of the membrane had separated before death, was remarkable.

Dr. MURCHISON, *5th May*, 1868.

B.—MALE GENITAL ORGANS.

16. *Cancer of the prostate.*

William J. J., aged 42. Date of admission, July 19th; of death, August 6th.

A man, aged 42, who was admitted into St. Thomas's Hospital one day in July last for retention. He had been suffering from difficult micturition for at least three months. In fact, two months prior to his admission he had had to seek the aid of a surgeon, who passed a No. 3 catheter for him. I saw him not long after his admission into hospital, and on examination found that, 1stly, he was the subject of a great enlargement of the prostate, and, 2ndly, that the orifice of the urethra was much constricted by the cicatrix of a chancre contracted four years ago. The prostate seemed to measure about two inches and a half, projected far backwards into the rectum, and felt very hard, without lobulation. The projection into the rectum had rendered defæcation difficult.

Before proceeding to pass a catheter to relieve the retention, I took the precaution to have the man mounted into the lithotomy position, then dilated the orifice, and afterwards found little difficulty in passing a long prostatic catheter into the bladder with the assistance of a finger on the rectum. The instrument was tied in for a time. He lived afterwards for eighteen days, and died from numerous collections of pus in various parts of the body, viz., subcutaneously on right upper arm, left axilla, left thigh, and on back, chest, and perineum, and, as the *post-mortem* examination revealed, numerous collections in the kidneys and lungs.

It is worthy of note that:—1. The growth backwards from the anterior portion of the prostate produced a tumour very like a tumour of the posterior half of the prostate.

2. The various collections of pus formed without any shiverings or rigors.

3. There is no account of a cancer of the anterior part of the prostate in the Society's *Transactions*.

Examined, August 7th, 1867, *by Mr. W. W. Wagstaffe.*

Larynx, trachea, and ***bronchi,*** healthy.

Lungs.—In left lung were several isolated deposits of pus, or cavities without (generally) well-defined walls. In some of these the contents were not true pus, but grumous, semi-purulent lung-tissue in a state of disintegration. In others the pus was thick and yellow, and the walls evident. On the right side only one deposit was found. The lung substance surrounding these was congested. There was no evidence of the softening commencing more at one point in the deposits than at another. The pus was not offensive.

Pleura.—Old adhesions at the back of each lung. Recent adhesions at lower and back part of left, opposite the chief purulent deposit.

Pericardium and *heart*, healthy. Clots in heart very firm, much decolorized, and in large quantity on each side; clots entangled, not adherent.

Peritoneum, healthy.

Lymphatic system.—Mesenteric glands rather prominent. Pelvic glands not materially enlarged.

Liver and *spleen*, healthy in appearance.

Stomach and *intestines*, healthy.

Kidneys, very large. The capsule nearly separated. On section there appeared large speckled masses of disorganized tissue bulging in several places under the capsule, so that they were ruptured in taking the latter off. The cause of this pulpy disorganized state was seen to be due to the presence of an immense number of minute purulent deposits, and many of these abscesses were scattered through the less implicated structures and under the investing capsule. The kidneys appeared otherwise healthy, and the lining membrane of the calices and infundibulum was healthy. The left kidney was rather more diseased and more congested than the right.

Bladder was greatly hypertrophied; its interior was rugous, and its lining membrane thickened, dark, and coated with a deposit of phosphates. The anterior portion in the region of the upper two-thirds of the prostate was ragged and villous from the disintegration of the prostatic cancer on this aspect. When floated under water this breaking up of the cancer gave a peculiarly villous appearance to this part of the bladder, but these shreds were not true villi, but had

similar microscopic characters to the rest of the tumour, though they were somewhat obscured by disintegration.

Prostate.—On cutting through the median line above the urethra, a white, moderately dense tumour was divided; this was limited in each direction by the boundaries of the prostate, except posteriorly, where it had involved the anterior wall of the bladder, and where its breaking down gave rise to the villous appearance described. It had pressed downwards upon the urethra and displaced it rather to the left side; and another rough passage existed through the tumour for about three-quarters of an inch. The anterior part of the tumour was firm, but towards the villous bladder-surface it became much softer and easily lacerated. On this surface, too, for the depth of about two lines, there was a peculiar crimson colouring, very marked, and somewhat resembling murexide. It was found microscopically to be caused by a general staining, and not to be confined to any particular cells or structures.

The posterior parts of the prostate, *i.e.*, below the urethra, were not involved in the disease.

The *ureters* were just free of the tumour.

Microscopically, the tumour consisted of masses of cells containing large nuclei. The cells were of very irregular shape and size, some caudate, many curled, and some spherical. They contained generally one, but frequently two to four, nuclei. The nuclei varied greatly in size, and contained usually one or two nucleoli. There was an abundance of free nuclei. The crimson portions and the villi were of similar characters, but more disintegrated.

Urethra.—About two to three inches in front of the prostate the lower wall of the urethra was destroyed for more than an inch, and a rather large foul abscess communicated freely with it. There was no opening through the skin of the penis here. Just within the meatus the urethra was rough, scarred, and dense.

Abscesses existed behind the left hip; on the inner side of the right arm (the latter had been opened); and in the axilla. They contained foul, stinking pus.

Over the knee was a patch of old ulceration about three inches by three.

The *femoral* and *saphena veins* were healthy.

Body muscular. Decomposition not rapid. Smell not offensive, except where abscesses had been opened.

Mr. Croft, *7th January*, 1868.

17. *Epithelioma of the penis.*

This specimen was exhibited to the Society at the request of Mr. Hillman, under whose care the patient had been admitted at the Westminster Hospital. The patient was a man, aged 58, a schoolmaster, whose wife had suffered for many years from "cancer of the uterus." She died in 1863; and in the course of the following year he noticed a small warty growth upon the glans, which at first caused no inconvenience, but subsequently ulcerated and then gave rise to much pain. The patient had lost flesh much of late; partly in consequence of the distress of mind produced by the nature of the disease, and partly from the actual suffering which he had endured. A gland in the groin was somewhat enlarged and indurated.

The specimen presented the ordinary characters of epithelioma of the glans penis, and was exhibited for the purpose of drawing attention to the connection which appeared to exist between cancer of the uterus in the wife, and epithelioma of the penis in the husband; and also in order that the relation between clinical history and anatomical structure in this disease might be investigated by the Committee, as every facility would be given to obtain further reports of the progress of the case.

Mr. Alexander Bruce, 18*th February*, 1868.

Report by the Committee on Morbid Growths on Mr. Bruce's case of cancer of the penis.—We have carefully examined the specimen submitted to us, and find that it presents the usual characters of epithelial cancer of the penis. The disease appears to have originated in the mucous membrane lining the prepuce at the part where it is reflected over the glans. From this it had extended to a limited extent towards the glans and more extensively along the prepuce. The disease had not penetrated deeply into the substance of the penis or glans. Under the microscope sections of the diseased tissue exhibited the ordinary structure of epithelial cancer. 7*th April*, 1868.

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18. *Testicles undeveloped and retained in the groin.*

The testicles were removed after death from a man, aged 60, who died in the London Hospital a few hours after an accident, by which his skull and spine were fractured. He was a married man, and his

wife had borne six children, the youngest of whom was 25 years of age.

He was a tolerably well-made, muscular man for his years. His scrotum was small and undeveloped. His testicles were found just external to the abdominal ring, and could not be pressed down into the scrotum. Each was contained in a distinct tunica vaginalis without morbid adhesions. The testicles were very small, about the size of filberts, like the undeveloped testicles of youth, and presented a similar structure, but were otherwise healthy. There was a good deal of fatty matter deposited around the epididymis. The vesiculæ seminales were small. No spermatozoa were discovered in the fluid removed from the vesiculæ, vasa deferentia, and substance of the testicles.

These testicles presented the appearance, not of atrophied, but of undeveloped testicles. They were exhibited in order to raise the question whether the organs had ever been in a condition to form spermatozoa, and to furnish a fertilizing fluid.

Mr. T. B. Curling, 21*st April*, 1868.

C.—FEMALE GENITAL ORGANS.

19. *Cystic colloid disease of the ovary associated with colloid disease of the peritoneum.*

The patient, a widow, aged 46, was admitted into the Middlesex Hospital, under the care of Dr. Goodfellow, on October 22nd, 1867.

In March, 1867, she first noticed a swelling on the left side of the belly; this rapidly increased, and the whole abdomen became greatly enlarged. During the three months preceding her admission she suffered from almost constant vomiting.

On admission, there was great distension of the belly, which measured thirty-nine inches in circumference at the umbilicus; there was distinct fluctuation, with all the signs of a large ovarian cyst.

The patient was emaciated, very prostrate, and vomited everything she took. She died on October 29th.

On *post-mortem* examination the left ovary was found converted into a large cyst, containing several gallons of fluid and an enormous quantity of gelatinous matter; besides this large cyst, the walls of which were thin and adherent to the abdominial parietes and the intestines, were an immense number of smaller cysts, of all sizes, down to that of a millet-seed, also filled with gelatinous matter.

The right ovary formed a tumour the size of a small orange, composed of similar cysts, with gelatinous contents.

The under surface of the diaphragm, and the surfaces of the liver, spleen, and intestines presented masses of colloid disease growing from them; these had the characteristic appearances of the so-called alveolar or colloid cancer, much resembling boiled tapioca. Many of the mesenteric glands and the glands in the transverse fissure of the liver were converted into similar masses. The viscera themselves did not contain any deposits.

On microscopical examination of the growth on the peritoneum, it presented large alveolar spaces communicating with each other. For the most part they were empty, or only contained some oily detritus; others were filled with small round and oval cells. I failed to find any of the large concentrically-arranged bodies usually met with in alveolar cancer.

This case is interesting, as showing a connection between two diseases generally looked upon as distinct, namely, cystic colloid of the ovary and colloid or alveolar cancer. Some pathologists, however, as Cruveilhier and Rokitansky, have always maintained their identity.

Dr. Cayley, 5*th November*, 1867.

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20. *Dilatation of the Fallopian tubes.*

The patient, a married woman, aged 30, died under Dr. Beale's care in King's College Hospital, of chronic renal disease. For the last year of her life she had not menstruated; there was no history of any uterine affection; and she never had been pregnant.

After death, two tumours were found in the pelvis, one on each side of the uterus; the left one was circular, about the size of a small orange, and distended with fluid; on its upper and inner surface was seen a tortuous but not uniformly-dilated canal, which was closed at the uterine end, but opened freely into the larger cyst at its ovarian extremity; this was the uterine portion of the Fallopian tube, while the cyst was the dilated fimbriated extremity.

The tumour on the right side was rather smaller; and the inner portion of the tube was uniformly dilated into a canal one-third of an inch in diameter; like the one on the other side, it communicated with the cyst by a smooth circular opening.

On each side the inner constriction was just outside the uterus, where the tubes seemed to be merely fibrous cords; externally the

fimbriated extremities were also closed and dilated into roundish cysts. Each cyst had thin walls, with fluid contents of a dark-brown colour, probably due to blood, which in these cases is often effused; the fluid contained about one-third its bulk of albumen and some chlorides, but no blood-crystals, nor was there any deposit on standing.

The left ovary could not be seen; the right ovary was found flattened out and lying in the wall of the cyst, but not communicating with it. No traces of ovarian structure were left, but a mere cyst with semi-fluid contents of a chocolate colour.

The uterus was quite normal in appearance; but no distinct opening could be seen at the fundus, where the tubes generally enter; outside, the peritoneal surface was normal, nor were there any adhesions showing previous inflammation.

The history of the patient was not very clear; so it remains doubtful whether there was congenital closure, or whether the obstruction was due to some affection of the tubes in adult life.

Dr. C. Kelly, *3rd December*, 1867.

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21. *Malformation of genito-urinary organs. Spina bifida, &c.*

A still-born fœtus, which had arrived at about the eighth month of gestation. The abdominal viscera were surrounded by peritoneum, but were not enclosed in the cavity of the abdomen, owing to a deficiency in the anterior abdominal wall; and associated with this there was an arrest of development posteriorly, giving rise to a large spina bifida. There was complete extroversion of the bladder, which presented the orifices of the ureters, and at its lower part a small fleshy eminence (uterus ?) communicating with the external parts by means of a narrow canal, admitting only a bristle. This, the only external aperture, was situated between two folds of integument resembling "labia." On each side of the posterior surface of the bladder was spread out a little tissue, which had the appearance of glandular structure. The intestine terminated in a cul-de-sac, situated behind the bladder. Dr. J. J. Phillips, 17*th December*, 1867.

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22. *Malformation of the uterus and rectum.*

The subject of this malformation was a female infant, which survived its birth four days.

The infant was brought to St. Thomas's Hospital on the afternoon of

the third day, for imperforate anus. It was already in a hopeless condition, very weak and very sick; abdomen very distended and tympanitic; the integument of the lower part of the trunk and extremities tense, elastic, and discoloured. On examination of the perineum there was not a vestige of an anal orifice to be seen. A median raphé was visible, but nothing more. There was no bulging to indicate the existence of a rectum.

After having passed a probe along what seemed the urinary passage, and allowed a little light-coloured thick fluid to flow out, I proceeded to make an exploratory incision into the perineum in search of the rectum. I carried the incision, as it seemed to me, quite two inches or more in depth, but without finding any indication of a rectal cul-de-sac; no bulging or impetus on pressure of the abdomen to be felt. I therefore returned the child to its bearer, and sent the latter home to the parents to obtain consent to an operation for artificial anus. It lived till next day, but was only brought back when dead, to be examined and buried at the hospital expense. Later, on opening the abdomen, which was very distended, the intestines, especially the large, were full of gas and meconium, as was only to be expected; but in the pelvis there rose a tense bladder-like body as large as a large apple, and this was surmounted by two large egg-shaped cornua or ears. On turning the large intestine downwards, it was found to take a normal course on to the pelvis, but was not traceable beyond the lower part of the back of the large sac-like body. In order to examine these parts more at leisure, and at the same time to preserve them for the museum, they were removed from the body, which was otherwise free from deformities. Accordingly they were dissected and mounted as you see them here, and I think the parts will be found to correspond with the following description :—

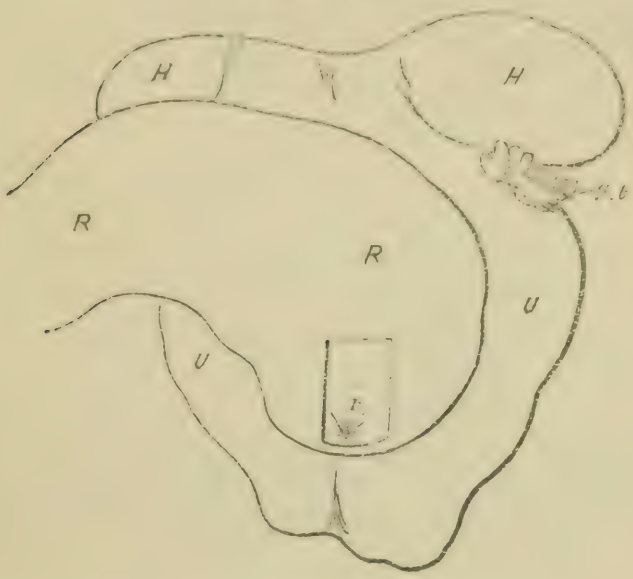
In the usual position of the anal orifice there is no natural outlet, but in the situation of the vaginal orifice is the opening of a canal, which leads backwards and upwards to the apex of a large pyramidal-shaped sac. The canal is that of the vagina, and the sac is the body of the enormously distended uterus. On cutting into this latter, a large quantity of light-coloured thick fluid escaped—a mixture of urine and mucus.

On looking into the uterus through an opening made on the left side, it will be seen that its walls do not enclose an undivided cavity, but that on the contrary the cavity is separated into two equal parts by a median septum, only incomplete below and in front, where an oval

opening exists of about half an inch diameter, which consequently forms a communication between the two sides of the uterus. Further, it may be seen that the vagina has an outlet from the body of the uterus on the right side of the septum, and that the posterior margin on the left side presents the minute opening of the scarcely pervious canal by which the rectum probably terminates.

The rectum may be seen at the back of the preparation turning

Woodcut 12.



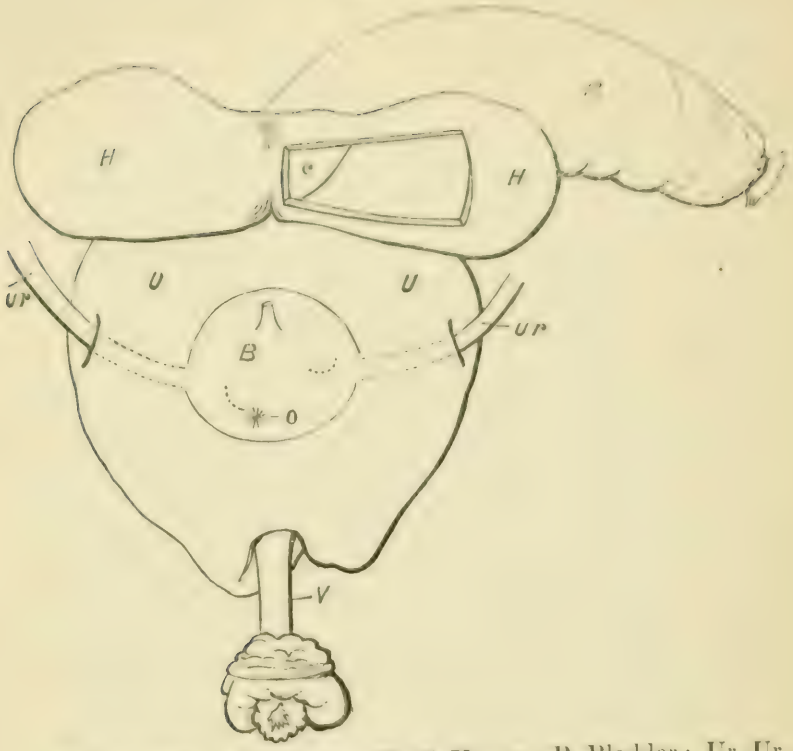
Back view. R. R. Rectum; *r*. Opening of rectum; U. U. Uterus; O. Ovary; F. *t*. Fallopian tube; H. H. Horns of uterus.

downwards from the left side to the median line behind the body of the malformed uterus, where it forms a large dilatation, and to all appearance terminates; but an opening made low down in the posterior wall shows that the dilatation becomes contracted to a mere pin-hole, which, no doubt, is the commencement of that scarcely pervious canal by which the rectum terminates in the uterine cavity.

If now the front of the preparation be observed, the bladder may be seen, although more than half-way down the uterus. It has been opened on the left side, and shows the respective openings of the ureters and urethra. The former are situated at irregular distances from the latter, and the latter appears abnormally small, but in the usual position on the base of the bladder.

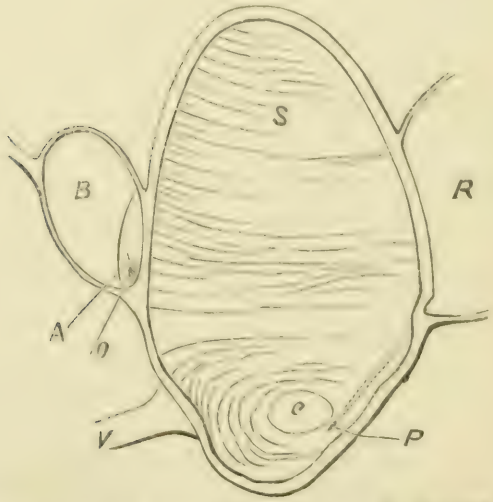
The urethral canal is not visible at all; but that one exists and

Woodcut 13.



Front view. R. Rectum; U. U. Uterus; B. Bladder; Ur. Ur. Ureters; O. Opening of urethra; H. H. Horns of uterus; c Communication between uterus and horns; V. Vagina.

Woodcut 14.



Sectional view. B. Bladder; R. Rectum; V. Vagina; S. Septum; C. Opening in septum; P. Probable opening of rectum; O. Opening of urethra; A. Opening of ureter.

communicates with the cavity of the uterus is certain, for more reasons than one.

Surmounting the body of the uterus two large egg-shaped sacs may be noticed: they are the dilated cornua of the uterus; they are separated from each other by the median partition, and each opens from the uterine cavity by an aperture visible close to the median partition.

The ovaries and Fallopian tubes may be seen, one on each side, behind and below its respective cornu, which a little overhangs it.

The annexed diagrams (Figs. 12, 13, and 14) have been copied from some which Mr. Stewart kindly made for me.

Mr. Croft, *7th January*, 1868.

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23. *Large multilocular ovarian blood-cyst removed by operation, from a patient labouring under acute peritonitis, &c.*

I was called down to Tottenham by my friend Dr. Tyndale Watson, to see a patient of his, on the night of Sunday the 3rd of May, 1868. I found a woman of 50 suffering very distressingly from a very large ovarian tumour. She had been vomiting incessantly since the previous Thursday, when after some unusual exertion she got acute pain, tenderness, and swelling of the tumour, which, I may observe, had existed for several years. The tongue was pretty clean. Pulse 105, and very feeble—scarcely to be counted, in fact. Respiration not difficult, but was "catchy," and showed exhaustion. Extremities quite cold, and pressure by the finger left a white spot in the midst of purple skin, the capillaries of which did not soon refill. Abdomen very large and tender. There was a large hard tumour, which I diagnosed to be ovarian. It felt solid, but I thought that the feeling of solidity was due to extreme tension. The whole pelvic as well as abdominal cavity was filled by the mass; and all the organs, especially the rectum, were pressed upon. The uterus was normal in size, but somewhat drawn up, and the vagina was thus elongated. The urine was said to be small in quantity; but probably it was so frequently passed that the friends were deceived as to the amount. It contained no albumen.

The diagnosis was ovarian cyst, most likely without adhesions, which, probably from the long walk, had suddenly taken on enlargement, and that the peritonitis was due to the sudden enlargement of the tumour.

I advised that, as the patient was so exhausted, she should have an enema containing brandy and opium, which was accordingly given by Dr. Watson. Ice and champagne to be taken frequently.

I also suggested that if on the following day she were alive and at all better, the operation of ovariotomy should be performed, and if that were not practicable that at any rate the cyst should be tapped, so as to relieve the distress caused by the extreme distension. This seemed a bold measure, and my friend Dr. Watson prudently withheld his complete assent.

On the following day I went down prepared to perform ovariotomy, should the patient's condition permit it.

Dr. Murray, of whom I borrowed some instruments, kindly volunteered to help me, and I was glad not only to have his assistance in the operation, should it be performed, but also his aid in determining the advisability of doing it under such circumstances.

Dr. Murray carefully examined the patient and pronounced an opinion adverse to the operation, in which opinion Dr. Watson joined. I confess that I was influenced by the opinion of such competent physicians; but on the other hand I felt a confidence in my patient's vital powers, and a confidence, too, in my own judgment of the case, which emboldened me to urge that something should be done for the patient. It was difficult to give chapter and verse my reasons for urging the operation; but I felt it was right, besides which it was obvious to us all that if left alone the patient would speedily die; and it was agreed by all that her condition could not be much aggravated by the operation, while it was just possible that it might be improved, that at any rate euthanasia might be rendered possible by tapping, and that to relieve her distress would be some gain.

It should be mentioned, too, that the patient herself strongly expressed an opinion that she should die unless something were done for her; and she was willing to undergo the operation if we could promise she would not die while undergoing it. This of course we could not promise; but having got her consent and that of her relatives, and having won over my friends, with their help I proceeded to operate.

Dr. Watson very skilfully gave chloroform, besides rendering other valuable assistance. Dr. Murray aided me in the operation. On reaching the peritoneal cavity, a pint or two of thick reddish serum escaped, and immediately the tumour shot up into the incision. It presented an appearance like that of the free surface of the placenta,

or of an haemorrhoidal mass. There were no adhesions. I punctured it, and a gallon of venous blood flowed from the cannula. This of course was startling, and made one think for the moment that one had to deal with a venous aneurysm. When no more would flow through the cannula I removed the trocar, and proceeded to lift the mass (which had not very materially lessened in size), from the abdominal cavity. As I was lifting it, it ruptured on the side opposite to that on which I had tapped it, and a pint or two of bloody fluid escaped into the peritoneal cavity, flowing over the intestines, which, I should have already remarked, were brilliantly injected—in fact, in a state of acute peritonitis. Having enlarged the abdominal incision to an inch above the umbilicus I got the mass up, and Dr. Murray put a stout silk ligature around the pedicle, which was remarkably small and short—not longer than three-quarters of an inch, or larger than one's little finger. Having severed the tumour, I turned to put it in a basin, but at that moment Dr. Murray exclaimed that the ligature was off, and that she would bleed to death. I grasped the uterus, and a clamp was applied, but the pedicle was too rotten for it to hold; so a silver and then a double silk ligature were applied, but with no avail; so it ended in our transfixing the right half of the body of the uterus, and tying with a stout silk ligature as a "dernier ressort." Of course we thought the case was now quite beyond hope, and I was urged to be as quick as possible in finishing the operation. However, I did what I thought was my duty, so as to afford the patient the best chance, should there happily be any attempt at recovery, though that looked almost impossible. Having put in some deep and superficial sutures of silver wire, we applied some dry lint and plaster and a bandage. At the end of the operation, which lasted about an hour, the woman, strange to say, seemed better. She had a better pulse, and, with the exception of her extremities, which were still cold, she was warmer. We saw her again in an hour, and she was still better, and had not been sick. From the hour of the operation she rapidly and uninterruptedly recovered completely, without a rigor or the formation of a single drop of pus, the wound having united by the first intention.

We found the tumour to be multilocular, containing much clotted blood, and that where the rent took place the walls were so thin that in all probability, had the operation been delayed a few hours, rupture would have taken place into the peritoneal cavity.

Dr. Murray informed me that microscopical examination gave no evidence of malignity.

Doubtless, as Mr. Spencer Wells suggested, the source of the blood was the twisting of the cyst upon its pedicle, which, preventing the escape of venous but not the admission of arterial blood, gave rise to haemorrhage into the loculi, and thus to the rapid enlargement. This explanation occurred to me at the time of the operation, for I noticed that the position of the tumour was altered after tapping.

The patient had had nine children and four miscarriages. Enlargement of the abdomen and irregular menstruation had been going on for a year. Dr. Alfred Wiltshire, *5th May*, 1868.

24. *Case of abscess between the vagina and rectum, causing no inconvenience during parturition.*

M. A. B., aged 32, was delivered of her fifth child on May 2nd, 1868. The labour was a natural one, occupying twelve hours. Her previous confinements had been good. She progressed favourably until the fifth day, when she had pain over the whole abdomen increased by pressure, constant vomiting, quick, wiry, incompressible pulse, anxious countenance, and dry tongue. The symptoms were relieved by dilute hydrocyanic acid in an effervescing draught, followed by opium gr. ¼, with calomel gr. ii., in the form of a pill, every four hours, and a poultice to the abdomen. This state of things lasted five days; the patient alternating between severe pain and comparative ease. The secretion of milk and the lochial discharge gradually ceased. On the evening of the tenth day after her confinement, she had a severe attack of pain, and sank four hours afterwards.

At a *post-mortem* examination, thirty hours after death, extensive peritonitis was discovered, probably consequent on inflammation of the uterus.

A large chronic abscess containing five ounces of pus was discovered between the vagina and rectum, but not communicating with either. There was nothing in the rectum or vagina to account for the origin of the abscess; and it is noteworthy that the patient never complained of any pain, or expressed the slightest inconvenience from it, either before, after, or during the act of parturition.

Mr. Osman Vincent, *19th May*, 1868.

VI. DISEASES, &c., OF THE OSSEOUS SYSTEM.

1. *Osteo-chondroma of femur; amputation of thigh; pyæmia; melanuria; death.*

Elizabeth M., aged 34, a married woman, mother of four children, gave the following history. In the autumn of 1861 she fell and struck her right knee; the joint subsequently was swollen for a few days, and then all trace of injury passed away.

In February, 1864, she had pain at the same part, and then noticed that there was a small, hard lump, immoveably fixed at the lower end of the right femur, just internal to the patella. A few days afterwards an attack of rheumatic fever commenced; most of the joints in her limbs were then swollen, and only after several weeks' illness did she recover. During this time the tumour was enlarging.

Early in 1865 she had a second attack of acute rheumatism, and was for many weeks in bed. In May, 1867, for a third time, she had rheumatic fever, though slightly. With these exceptions, her general health had been good.

Previous to the illness in May, 1867, the tumour in the thigh had increased slowly; but subsequently its growth became rapid. It did not prevent her from fulfilling her ordinary household duties, except that she could not kneel.

The patient came under Mr. Bryant's care at Guy's Hospital on September 25th, 1867. She seemed then in good health; and the cardiac and pulmonary sounds were natural.

At the lower part of the right thigh was a hard, tense, inelastic swelling, apparently arising from enlargement of the condyles and lower part of the shaft of the femur, to a distance of nine inches from the lower articular surface of the bone. Measured transversely with callipers between the most prominent parts of the condyles, the diameter of the right thigh was found to be six inches; that of the left limb, between corresponding points, was three and a half inches. Antero-posteriorly the right limb measured six and a half; the left, three and a half inches. The tumour at its upper part—that is, the middle of the thigh—had a diameter of five and a half inches; the left limb at the corresponding level measured four inches. The circumference of the tumour over the patella was twenty inches; of the left limb, at the same level, thirteen and a half inches. The enlargement extended around the whole circumference of the femur, and was some-

what lobulated on the surface. The patella, quite moveable, was pushed bodily outwards. As the patient lay in bed, the leg was fully extended on the thigh, and she could flex it to an angle of about 130°. The heels were exactly at the same level, the right limb being not in the least elongated. There was no effusion into the knee-joint. The arteries of the foot pulsated naturally, and she could walk without any pain. The tumour was not generally painful or tender, though occasionally there would be a dull aching sensation about it. The glands in the groin were not enlarged.

October 5th. The thigh was amputated by Mr. Bryant at the junction of the upper and middle thirds. Carbolic acid dissolved in oil was used as a dressing. The stump suppurated. On *October 8th* the patient was feverish; on the *14th* a rash much resembling that of scarlatina appeared on the skin, her fauces became reddened, and some of her joints were swollen and painful. Her tongue was red, dry, and fissured, and she was delirious at night.

October 18th. She passed black urine, which was analysed by Dr. Stevenson, whose report upon it is contained in the *Guy's Hospital Reports*, Series III., vol. xiii., page 407.

October 18th. Patient insensible; died at 8.30 A.M.

An inspection of the body six hours after death was conducted by Dr. Moxon.

An excessive crop of miliary eruption still remained on the skin, the vesicles of which were full of clear liquid. There were vegetations on the mitral valve. In the lower lobe of each lung were seated three or four patches of dark, apoplectic appearance. Both shoulder-joints and the left knee-joint were suppurating. As regards the latter, a patch of sub-synovial tissue in the track of the anastomotic artery was suppurating; this parenchymatous suppuration had probably preceded the suppuration of the articular surface. No further formations of tumours were found in the body.

The preparation was brought before the notice of the Pathological Society as an admirable example of osteo-chondromatous tumour involving the lower third of the femur. It was unusually dense in some parts, and in others contained much fibre-tissue.

Mr. THOMAS BRYANT, *15th October*, 1867.

Report by the Committee on Morbid Growths on the tumour of the femur shown by Mr. Bryant.—The tumour surrounds the lower two-fifths of the thigh-bone; it extends over a part of the patellar division of the

articular cartilage of the condyles. Its surface is smooth and nearly even, but it is raised into large, low, convex elevations, and at a few places marked with furrows. Section shows the bony part continuous with the shaft of the femur. The marrow-canal of the bone is partly —and at points wholly—filled up by the inward growth of the tumour, but just above the condyles a part of the canal has almost its natural size; below this, as far as the middle of the condyles, the tumour causes a strongly-marked condensation of the spongy interior of the bone, this condensed portion ceasing by a defined sinuous edge.

The greater part of the tumour is composed of dense bone; this forms about three-fourths of every section. The bone is in the shape of masses growing away, mostly radially, from the femur-shaft. At the lower end of the tumour the bone so preponderates that it forms seven-eighths of the section, the softer part only filling gaps that occur in the otherwise solid osseous mass. At the upper part of the tumour the bone is in stout, solid formations, often joining; but the softer part here forms half, or even at parts three-fourths, of the section-face. The direction of the bone-growth here is more evidently radial, but at the uppermost part it radiates upwards rather than outwards, at acute angles with the shaft of the femur.

The soft part is opaque white, with a very slight disposition to pellucidity; it is firm and elastic to pressure, hard to compression, and very tough. At first sight it has a homogeneous appearance, but closer examination discovers radiating bands of tendinous appearance (Plate X., Fig. 1).

When the microscope is used upon fine sections, the radial bands are seen to be very numerous and to be composed of wavy tendon-fibres; they appear generally parallel in the field, but some diverge and join, and others open out to be continuous with the intercellular stroma. This stroma consists of closely-fitted, generally curled fibrils of different sizes; it forms beds in which are loosely lodged delicate cells with round nuclei and one or two nucleoli. We failed to be certain of a cell-wall, but a small quantity of soft material was about many of the nuclei; some of these were much larger and showed an endogenous origin of nucleoli; at least as many as twelve of these are present in some large nuclei. These cells are altered in the preparation after being kept in spirit, so that they no longer fall out of their beds to become free in the field of the microscope. In their place are seen glistening nuclei in which a nucleolus cannot be perceived. But a few of the cells still remain, and these show a nucleus and nucleolus, a cell-wall and

fatty cell-contents. They appear to be in a state of fatty degeneration. Close to the bony spicules the tissue takes a more regular arrangement, so that in section the cells are found to lie in regular order round the growing bone, lying flat towards its surface as if compressed in its growth, but instead of being thinner for the compression thus suggested by their disposition, the cells and the intercellular material here swell out, and at the same time have a glistening appearance, the cells being elongated, finely jagged on the margins, and in short in their disposition and form closely resembling bone-corpuscles. The transformation of the whole into true bone is effected by the deposition of lime-granules, during which deposition the canaliculi become distinct. (See Plate X., Fig. 2.)

Where the tumour overhangs and is connected with the cartilage on the patellar face of the condyles, it has a small, semi-detached, rounded mass which is its lowest part. This little mass of the size of a filbert-kernel is composed of hyaline cartilage, more or less ossified, divided into lobes as in enchondroma. Microscopic examination of this part shows perfect hyaline cartilage in all stages of transformation into perfect bone according to normal development, the cartilage-matrix becoming calcified and then vacuolated by partial decalcification so as to form open spaces, in and on whose walls lacunar cells develope. Mingled with the parts undergoing this change are others having all the appearances before described as common to the bulk of the tumour; and these latter parts undergo ossification from membrane in immediate continuity with the calcifying and ossifying cartilage.

The substance of the tumour would come within the description of ossifying fibro-cartilage. It especially corresponds with the material called "sub-periosteal blastema" or "osteoid tissue," from the natural situation of which it grows. *5th November*, 1867.

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2. *Fracture of the metacarpus.*

The specimen was taken from a case of amputation of the fore-arm in a woman of 72, for compound comminuted fracture of both bones of the fore-arm, the consequence of being knocked down by a locomotive engine. It was noticed that the back of the hand was swollen by effused blood; and upon dividing the soft tissues it was found that the third, fourth, and fifth metacarpal bones were fractured close to their bases, but without displacement, and that the second metacarpal bone

DESCRIPTION OF PLATE X.

Figs. 1 and 2 illustrate the Report of the Committee on Morbid Growths on Mr. Bryant's Specimen of Osteo-chondroma of the Femur, described at p. 299. From drawings by Dr. Moxon.

Fig. 1. Section through condyle of femur, showing ossifying enchondroma growing from the articular cartilage. Natural size.

Fig. 2 represents a portion of the section shown in fig. 1*a* highly magnified. At the bottom of the figure is shown ossification of cartilage in the enchondromatous nodule, and at the top is seen ossification of the periosteum continuous with the ossification of the cartilage. *a*, Hyaline cartilage; *b*, calcification of the same; *c*, vacuolation of the calcified cartilage; *d*, appearance of bone-corpuscles in the vacuola walls; *e*, tissue which forms the bulk of the tumour composed of intercellular substance of curved close-set fibrils (*f*) and cells (*g*), with nuclei and nucleoli, and occasionally fatty cell-contents, but without capsules. At *h* and *i*, bone growing into the tissue; *k*, medulla cells; those at *l* proliferate and lie along the growing edge of the bone, into which they are then transformed by simple calcification of the intercellular substance.

Fig. 3 illustrates the microscopic appearance (with $\frac{1}{5}$-inch object-glass) of Dr. Allbutt's Specimen of Glioma of the pons Varolii. From drawing by Dr. Moxon (p. 21).

Fig. 1.
Fig. 3.
Fig. 2.
a
b
c
d
e

was torn from its attachments, and had wrenched off a small portion of the trapezoid bone. Both the radius and ulna were extensively comminuted close to their lower extremities, but the wrist joint was not opened. The patient sank from exhaustion a fortnight after the operation. The preparation is preserved in the Museum of University College. Mr. Christopher Heath, *5th November*, 1867.

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3. *Medullary cancer of the lower jaw.*

The specimen was removed from a little girl aged 5 years, who was the tenth child of a family of eleven children, all living and healthy, and whose father and mother are strong and robust. The patient was fat and well nourished, and in perfect health until the last week in July (seven weeks before I saw her), when the mother noticed that the second temporary molar on the right side was raised above the others, and that the gum looked swollen. Her mother took out the tooth, which was quite loose, but the swelling increased and loosened the first permanent molar. She was under the care of Mr. Mumford of Ipswich, who advised her being brought to town, as the growth had increased so rapidly that she had been unable to eat solid food for a fortnight before I saw her.

On September 9th I found the right side of the lower jaw considerably enlarged externally; and on opening the mouth a large, irregular, reddish mass, filling up all the cheek on the right side, was seen, the extent of which it was impossible to define. The tumour had a semi-elastic feel, and there were apparently no enlarged glands in the neck.

On September 10th I removed the right half of the lower jaw, sawing through the bone to the right of the symphysis. The tumour broke away from the upper part of the jaw, which it had in great part destroyed, and the condyle and coronoid process were removed separately. The child made a perfect and rapid recovery, leaving town in a fortnight.

The tumour proved to be of soft consistence, and had evidently sprung from the interior of the jaw, since a section of its lower border showed that, though surrounding the base of the jaw and attached to its periosteum, the bone was still entire, whilst all the alveolar portion was completely destroyed. Owing to its being thus invaded, so that the anterior part was completely destroyed, the ramus had

broken away from its small bony attachment, and the coronoid process was accidentally broken off during the operation. The upper surface of the tumour, which was still covered with mucous membrane, was deeply grooved by the teeth of the upper jaw. The point of section of the bone was healthy, and close to it were the canine and first temporary molar teeth. Imbedded in the upper and posterior part of the growth was the crown of the second permanent molar carried quite out of its normal position. To the naked eye a section of the tumour gave the impression of medullary disease, and this was confirmed by microscopical examination by Mr. Bruce, whose description is annexed.

The patient continued in perfect health until the 22nd of October (exactly six weeks from the day of operation), when the mother noticed a small growth within the mouth in the site of the former disease. This was seen by the medical attendant the next day, and I was communicated with; but by the 26th (four days), when the child was brought to town, not only had a large growth formed in the mouth, but the jaw was involved beyond the symphysis, and a fungus protruded through the cicatrix beneath the chin. The child's health appeared unaffected, however, and no enlarged glands were to be found.

On October 27th I again operated, opening up the old cicatrix, and isolating the portion of skin involved in the fungus. After carefully reflecting the skin so as to include no portion of the growth, I sawed through the jaw in front of the second molar tooth on the left side, so as to be quite beyond the disease, and, having secured the tongue with a thread, divided the genial muscles, and removed the tumour.

The second tumour closely resembled the first, and was evidently connected with the interior of the bone. A section showed a well-marked specimen of medullary cancer.

The patient is now convalescent, and the wound in great part healed.

This is one of the most marked examples of rapidly growing cancer with which I am acquainted. It is to be feared that the disease will again return, and prove fatal at no distant period.

Mr. Christopher Heath, *5th November*, 1867.

Addendum to the above case.—On the 16th December, 1867, I heard from the father that the child was perfectly well, and that there was no appearance of return of the disease. He forwarded a photograph, which showed how little deformity had resulted from the removal of two-thirds of the lower jaw.

On the 8th January, 1868, I heard from the medical attendant, Mr. Mumford, that the disease had reappeared at the symphysis, and also in the masseteric region on both sides, there being loss of appetite, exhaustion, and general irritability of system. The little patient died, worn out, on 9th February, 1868. C. H., *May*, 1868.

Microscopical examination by Mr. A. Bruce.—A small portion from the central part of the tumour was submitted to examination, and found to consist entirely of cells and nuclei distributed in the meshes of a very fine stroma. The cells were oval, irregularly rounded, and caudate; they presented for the most part a delicate but distinct cell-wall, a large and prominent nucleus and nucleolus, and granular contents. The cells varied from $\frac{1}{2000}$ to $\frac{1}{2500}$ inch in transverse diameter. The delicate stroma bears a very small proportion to the cell-structures in the formation of the growth.

From the microscopic characters, as well as from the general medullary appearance of the tumour, there can be no doubt that it is encephaloid. Mr. A. Bruce, *5th November*, 1867.

Report by the Committee on Morbid Growths on Mr. Heath's specimens of medullary cancer of the jaw.—Having carefully examined both tumours, we find their minute structure to be as described by Mr. Bruce; and, on anatomical grounds, we concur in the opinion expressed by Messrs. Heath and Bruce respecting their nature.

19th November, 1867.

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4. *Two cases of excision of a joint.*

Case I. A youth, 17 years of age, whose right ankle-joint had been excised three years previously on account of strumous disease.

The limb was most shapely and useful. The lad was a collector, and on his feet many hours daily without the least discomfort.

Case II. A female, 61 years old, had been the subject of suppuration and destruction of the right shoulder-joint. Excision of the head of the humerus and of half the glenoid cavity had been performed through a longitudinal incision, and three weeks after the operation the patient was well, and with a most serviceable member.

The patients were exhibited.

Mr. C. F. Maunder, *19th November*, 1867.

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5. *Case of compound comminuted fracture of the upper end of the tibia, opening into the knee joint, with rupture of the anterior tibial artery.*

The specimen consisted of a leg and foot of a muscular man, aged 46, recently amputated at the lower third of the thigh.

The tibia was fractured, depressed, and comminuted into splinters by the fall of a heavy iron bar across it, just below the knee-joint. A small external opening through the skin at the inner tuberosity had apparently been produced by one of the splintered portions. A vertical fissure had extended upwards into the knee-joint, splitting the articular cartilage covering the external tuberosity near the attachment of the fibro-cartilage to the spinous process. On moving the tuberosities upon each other, blood was seen to well up through this crack. The posterior ligament of the joint was also torn considerably opposite the outer femoral condyle. The upper tibio-fibular joint was opened behind, and the head of the fibula twisted out of its place, and quite loosely held by the biceps tendon. A sharp-pointed splinter of bone had lacerated and entirely divided the anterior tibial artery (which had an unusually high origin from the popliteal) on its deeper aspect, just as it passed between the tibia and fibula, below the popliteus, through the bifurcated origin of the tibialis posticus muscle. The artery above the wounded portion and the popliteal trunk itself were filled with a loose clot, entirely blocking up their calibre. The chief veins and nerves were uninjured; but the muscles of the calf were crushed, lacerated, and ecchymosed. The popliteal space and the subcutaneous and intermuscular areolar structures were distended with blood half-way down the leg and up the thigh. Some of this had made its way into the knee-joint, the synovial membrane of which was also distended with synovial effusion. A gangrenous-looking patch or two appeared on the skin at the site of the blow, and the soft parts under the skin were much bruised and ecchymosed. The leg was amputated by Mr. Wood seven or eight hours after the injury; the patient did tolerably well for eight or nine days, and then died from sloughing of the stump and pyæmia.

The specimen was interesting chiefly from its bearing upon the question of primary amputation in such cases.

There was at first remarkably little alteration in the outline of the limb about the joint. Crepitus and depression of the bone-surface was evident, but the movement of one tibial tuberosity upon the other was so indistinct, that the evidences of the knee-joint being implicated

were chiefly of a probable character, viz., from the near contiguity of the injury, and from the rapid effusion into the joint which ensued. The evidences of a wounded artery of large size were more decided. No pulsation could be distinguished, either in the anterior or posterior tibial artery; while a tense, increasing, and fluid tumour, limited in its outline by the boundaries of the popliteal space, and independent of the more superficial injuries and ecchymoses, indicated together a serious arterial lesion, the location of which was, naturally, from the absence of pulsation in the posterior tibial (explained afterwards by the clot in the main trunk) attributed to the popliteal artery. The injury to the skin and soft parts was apparently so slight, comparatively, as hardly to afford an inducement to amputation. There can be no doubt, however, that amputation afforded the best chance for life under the amount of injury present in this case.

Mr. JOHN WOOD, *19th November*, 1867.

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6. *Large osteo-sarcoma of the lower jaw, removed by operation.*

The tumour involved the right side of the lower jaw, extending from the edge of the masseter on the left side to half way up the ascending ramus on the right side. Prior to the operation, the measurements were as follows:—from the lobule of one ear round the chin to the lobule of the other ear, nineteen inches and a half; from the border of the lower lip across the chin to the pomum Adami, thirteen inches; from the angle of the jaw across to the same point on the opposite side, fourteen inches. When the man was sitting, the tumour rested upon the top of the sternum, but it moved freely when he opened and closed the mouth. Between the lips, of which the lower was much stretched, so that the circumference of the mouth measured nine inches and a half, there was a red granulating mass of disease, which came in contact with the upper lip; but when the mouth was opened, a space intervened, through which a second mass, covered with the mucous membrane of the floor of the mouth, could be seen almost in contact with the roof of the cavity and completely hiding the tongue. Between these two masses some of the teeth could be felt and seen. From beneath the cheek on the right side a foul yellowish discharge constantly exuded. An inch below the lower lip was a large, red, fungous mass, covered with healthy granula-

tions; this extended to the lower border of the tumour, and the skin was adherent around it. On the right side, just below the angle of the jaw, there was another smaller fungous projection; but the skin on the left side was perfectly healthy, though much stretched. The right ramus of the jaw could not be defined, though the angle could be indistinctly perceived. The articulation, however, was not involved. The tumour, though overlying the neck, in no degree involved its tissues, and there were no enlarged glands either below the jaw, or in the neck. On the left side the whole of the ramus and angle could be clearly made out, the disease stopping short of the latter point. The tumour weighed four pounds six ounces.

The patient, aged 32, was admitted into University College Hospital, on November 13th, 1867, with this enormous tumour of the lower jaw. About eleven years before he had a severe pain in the right jaw, resembling toothache, and after some little time he perceived a small hard swelling, about the size of a nut, just below the right canine tooth, which was not decayed, nor were any of the teeth in its immediate vicinity diseased. This swelling continued about the same size for five or six years, during the latter part of which time it was entirely free from pain. Four years before it began to enlarge, and two years afterwards, he was thrown from a cart and fell on his face, when he had profuse bleeding from the gums.

The tumour now grew rapidly, spreading along the anterior surface and involving the whole of the right side of the jaw. About twelve months before, it began to involve the left side of the jaw and extended up to the angle. He had been seen by various medical men at his native place, and also by one hospital surgeon in London, and the question of an operation had been discussed, but nothing had been done. Two years before, one quack burnt the inside of his mouth with acid, and another put a white ointment upon the surface of the tumour, which caused the skin to give way at the point where the protrusion appeared. About a year before admission the portion of the tumour near the right angle of the jaw rapidly increased, and in a short time the skin gave way, and a quantity of offensive pus was discharged, but there was no diminution in the swelling. Latterly, owing to the difficulty in swallowing, he had been able to take little but milk and brandy, and this in small quantities at a time, so that he had become much reduced in strength. His family had all been healthy and long-lived.

The tumour was removed on November 28th, 1867, by reflecting the

skin, and sawing in front of the masseter on the left side; disarticulation was performed on the right side, and the coronoid process was broken off in this part of the operation. The patient rallied from the operation, but died on the sixth day (*v. Lancet*, December 21st, 1867).

The tumour, which is now in the Museum of the College of Surgeons (1041 A), presented the characters of a fibro-cellular growth, springing up between and expanding the plates of the lower jaw. In the central portions it presented that peculiar semi-cartilaginous structure, especially described by Sir Philip Crampton as a peculiarity of this disease. Mr. Bruce has been good enough to examine the tumour microscopically, and his report is annexed.

Mr. Christopher Heath, *3rd December*, 1867.

Report upon the structure of Mr. Heath's osteo-sarcoma of lower jaw.—The tumour removed by Mr. Heath consists of a lobulated mass of soft but elastic consistence, resembling in parts a recent decolorized fibrinous coagulum. It is for the most part of a pale straw colour, with here and there patches of a flesh tint, and mottled in spots with deep crimson. In front is a prominent fungating mass, which had penetrated through the skin at the time of the operation.

The structure consists of a fine fibrinous stroma, varying in different parts in its degree of fibrillation; in some portions there are very distinct fibres, in others only imperfect ones, as is frequently seen in rapidly growing parts, whilst in others, again, the stroma is dimly granular and closely resembles the matrix of cartilage, but differs from it in its softness; this latter character is limited to the parts in the interior in immediate connection with the bone.

Imbedded in this stroma are numerous cells, lying for the most part with their axes parallel to one another, but in many places without any apparent uniformity in this particular. The cells are small in size, at first sight more resembling elongated nuclei, but in all cases a cell-wall may be distinctly traced when a sufficiently high power is employed. The majority are elongated fusiform or fibre-cells, with a considerable proportion, however, of oval, rounded, or even polygonal cells. Their size varies from $\frac{1}{2000}$ to $\frac{1}{800}$ inch in diameter. The nuclei are proportionately large ($\frac{1}{3000}$ to $\frac{1}{4000}$ inch) and prominent, and contain one or two very distinct glistening nucleoli. The cell-contents, when any exist, are granular.

Some of the rounded and polygonal cells closely resemble those

found in malignant growths, especially in the irregularity of their arrangement, and their large eccentric nucleus: one cannot, however, lay much stress upon these characters in the present case, considering the small proportion which these cells bear to the whole mass of the tumour.

Fragments of bone and of calcareous matter are found scattered throughout the tumour, and appear to be in part derived from the jaw itself, and in part to be a new development.

The general structure of the tumour is that usually described under the head of osteo-sarcoma, and it belongs evidently to the group of simple fibro-plastic tumours, but differs from the myeloid fibro-plastics in the equal proportion existing between the cellular and fibrous elements. Mr. A. Bruce, *3rd December*, 1867.

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7. *Specimen of exostosis occupying the left orbit and upper part of the cheek, with deep attachments to the body of the sphenoid and æthmoid bones.*

The patient from whom the tumour was removed was a man, 21 years of age, presenting the appearance seen in the photograph, which was taken a short time before the operation, and, with the exception of the horrible deformity produced by its presence, having a healthy appearance. He first noticed a swelling at the inner side of the eye twelve years ago. This gradually increased in bulk for six or seven years, but since then he has not observed any great alteration in its external dimensions and appearance.

Two years ago he put himself under the care of a quack, who applied caustic to the surface of the cheek and the tumour, the result of which is seen in the excavation, with a black scar of about the size of a shilling, at the lower and inner part of the tumour.

The swelling of the cheek, the displacement of the eyeball, and the other distortions are best described by the photograph (Fig. 15). To the touch the tumour was of bony hardness. Internally it invaded the nostrils completely, obstructing the left nostril and thrusting the malar bone outwards. The roof of the mouth, the alveolar borders and the teeth were quite unaffected, and the tumour was not visible in the pharynx. The eyeball, though so much displaced, had its movements tolerably perfect, and the sight was very little impaired. The lids being much stretched and expanded in every direction still protected

the eye, but could not be completely closed, in consequence of a slight eversion of the lower lid.

The skin over the tumour was little altered in appearance, and adhered only slightly to the part below the lower lid, and to that portion of it which had been attacked by the caustic.

Sir William Fergusson removed the tumour on November 30th, and found that the principal attachment of the deep part of it was to the body of the sphenoid above the pterygoid process, which was exposed during the operation. But there was also a very firm attachment to the upper and inner walls of the orbit, which offered great resistance.

Woodcut 15.

Shows the appearance of the patient before the removal of the tumour. From a photograph.

Notwithstanding the unusual difficulties of the operation, very little blood was lost. The patient suffered very little after the operation, and went on well till the morning of the third day, when he became suddenly faint and rapidly sank.

The *post-mortem* examination, though it revealed no lesions of the viscera sufficient to account for the sudden and fatal termination of the case, afforded an interesting insight into the deep attachments of the exostosis.

After the removal of the brain, which with its membranes was perfectly healthy, two bony tumours or prominences were found lying in the middle and anterior fossæ of the cranial cavity. One, the

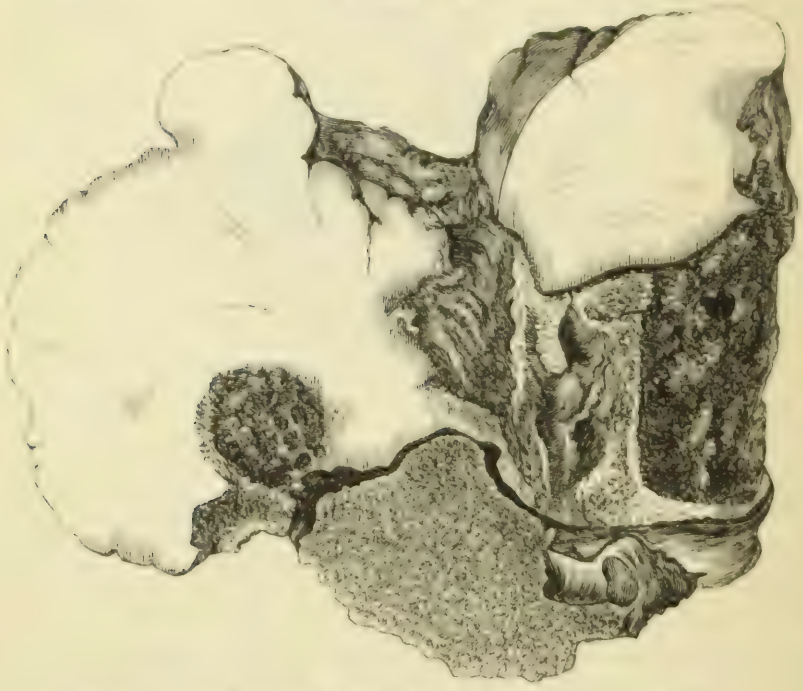
larger prominence, grew from the left side of the body of the sphenoid, and was of about the size and shape of a walnut. The other smaller one was situated at the inner end of the lesser wing of the sphenoid, and immediately above the optic nerve, which must therefore have passed through the centre of the tumour, of which these two nodular eminences were mere extensions.

The nerve, nevertheless, though considerably elongated, did not present any other abnormal appearances.

The tumour, with the separate nodules which were afterwards removed at the time of the operation, weighed $10\frac{1}{2}$ ounces, or 5,040 grains.

Dr. Duka's weighed	.	1200 grs. = $2\frac{1}{2}$ ozs.
Dr. Michon's „	. .	1300 grs.
Mr. Hilton's „	. .	7080 grs. = $14\frac{3}{4}$ ozs.
Mr. Lucas's „	. .	387 grs. after drying.

Woodcut 16.



Represents a section of the tumour of the natural size.

A section of the tumour, which was made by Dr. Trimen, curator of the King's College Museum, shows that it consisted of two distinct and loosely-connected parts—a superficial hard ivory exostosis, varying in thickness from half an inch to one and a-half or two inches; and a

deep more vascular bony tissue, resembling that of the lower end of the femur, but more condensed and heavier. (See Fig. 16.)

These two portions of the tumour were united in some places by a loose cartilaginous tissue, similar to that seen between the epiphyses and shafts of growing bones, and so loosely that, in the act of making the section, the union of the two portions gave way at several points. In the specimen, one or two of these loose fragments have been artificially united to the principal mass, so as to present the appearance of the tumour as it was seen immediately after removal.

The remarkable fact that the ivory portion of the tumour did not break away from the less dense portion at the time of the operation can only be accounted for by the fact of the latter being almost, if not entirely, surrounded by the former as by a shell, and by the dovetailing of the *condensed* bony part into the recesses of the ivory tissue. As soon as the shell was cut through, these means of adhesion were destroyed, and a separation of the two parts resulted in the more loosely-attached portions. The surface of the tumour when fresh was irregularly nodulated, and covered by a thin transparent membrane, resembling that of the nasal passages, and having in several points polypoid growths attached to it. This probably resulted either from the tumour having first destroyed the walls of the antrum and nasal cavities by pressure, and then thrusting the mucous membrane before it and receiving an investment or covering of its surface as it proceeded in its growth, or, what I think more probable, from the tumour having originated in the æthmoidal cells of the sphenoid, and received its investment from the lining membrane of those cavities.

There are several pathological points of interest in the case. First, it illustrates and explains the apparently unaccountable occurrence of bony tumours in this region without any living attachment to the surrounding tissues. Three such cases at least are on record. One by Dr. Duka in '*Pathological Transactions*,' vol. xvii., p. 256; one by Mr. Lucas in 1802, '*Edinburgh Medical and Surgical Journal*'; and one by Mr. Hilton, '*Guy's Hospital Reports*,' vol. i., p. 493.

In Dr. Duka's case the specimen (which weighed 1200 grains, *i.e.*, rather less than a quarter of the weight of the specimen before us) is described as of ivory consistence, and as having several surfaces with irregular depressions and elevations, which may very likely have corresponded to a surface of the bone-tissue, such as that which

is seen in the specimen removed by Sir William Fergusson. It is, I think, easy to conceive that in such a case some accidental violence, or some increased pressure against the neighbouring bones caused by the progress of the disease, would separate the loose attachment of the ivory portion of the tumour, and leave it loose in the cavity of the jaw.

In the case by Mr. Lucas, an attempt to remove the growth had been made and had failed, and the tumour was found to be loose and unattached eleven months after, so that in this instance there can be little doubt that the cartilaginous union had been so disturbed or dislocated, that a separation of the superficial portion had resulted; and this view is confirmed by the fact that a surface or surfaces are described as follows: "They resembled those points of bone to which cartilage, ligament, or membrane is firmly attached, being full of small pits or depressions, and rough, as if corroded by the action of a caustic fluid." "In no part, after the most careful examination, did it show any appearance of fracture, and therefore (concludes Dr. Duncan, who reported the case), it could not have been an exostosis." In all other respects, however, the characters were exactly those of an ivory exostosis, and I have little doubt, from the appearances here described, and from a comparison of those appearances with the section of Sir William Fergusson's specimen, that there had been an articulation of the tumour to a deeper portion of bone, which had been so disturbed by the previous attempt at removal, that necrosis and separation of the superficial parts had taken place.

A similar case is reported by Mr. Hilton in '*Guy's Hospital Reports*' (vol. i., p. 493), which probably may be explained on a similar principle. Indeed the representations in illustration of that case make it almost impossible to explain the spontaneous separation of the tumour in any other way.

A second point of pathological interest is the attachment of the base of the tumour to the sphenoid and æthmoid. It would seem as though exostoses of this particular kind had a special preference for the æthmoidal cells and the sinuses in communication with them, either in the sphenoid or the frontal bone. Several instances are recorded in illustration of this peculiarity.

1. There is a remarkable preparation in the Museum of the College of Surgeons of a tumour closely resembling the one before us, in being composed in great part of dense ivory-like structure, and also in having a central and attached base of vascular close cancellous tissue.

This tumour occupies the frontal sinuses and the adjacent orbit, and is described in the catalogue as having probably originated in the æthmoidal cells.

2. A case by Mr. Bowman of a small exostosis removed from the orbit (*'Pathological Transactions,'* vol. xi., p. 265), which was attached to the orbitar plate of the æthmoid by a short narrow pedicle. This was a specimen of dense ivory exostosis.

3. Mr. Hilton's tumour must, from the description, have occupied the æthmoid cells.

The complication of similar tumours in the fossæ of the cranial cavity and the passage of the optic nerve through the very centre of this enormous mass of bone, with very slight interference with its structure and functions, are also very interesting points in pathology.

In size, the tumour is probably the largest and heaviest exostosis that has ever been removed by operation from the region of the orbit.

Mr. W. Spencer Watson, 17*th December*, 1867.

Appendix to the above report.—A microscopic examination of the soft tissue between the ivory-like structure and the softer bone was made while the specimen was quite fresh by Dr. Trimen and myself.

To the naked eye, it had a semi-transparent pink appearance, and was so soft that it could not be cut in thin sections without difficulty.

It consisted of very numerous nucleated cells, in a homogeneous or faintly-granular matrix, which resembled those of ossifying cartilage, excepting that they were more numerous and smaller. In parts they were arranged in vertical lines, and bone was deposited in the interspaces.

This tissue occupied the plane of demarcation between the denser and softer bone; but at a point about the centre of the tumour there was a continuity between them, the one gradually passing into the other.

In by far the greater extent of the line of junction, as seen in section, there was no direct continuity between these parts. These appearances have been somewhat altered by a shrinking of the soft cartilaginous material after its immersion in spirit, and the consequently greater prominence of the bony spicula in its immediate neighbourhood.

The direction of the principal vascular canals in the ivory tissue vertically to the surface lends additional weight to the remarks made above in reference to the supposed origin of necrosed and loose bony

tumours in this region. For it is obvious that a very slight lateral displacement of the superficial ivory would at once cut off its principal vascular supply: the same thing would happen should any sudden effusion of blood occur in the soft cartilage between the two layers of the tumour. W. S. W., *27th January*, 1868.

Report by the Committee on Morbid Growths on the bony tumour exhibited by Mr. Spencer Watson.—We have examined this tumour chiefly with reference to its mode of growth, and the relations of the hard and soft bony tissues to each other. The hard, ivory-like bone, which varies from a thin shell of $\frac{1}{4}''$ to masses of $2''$ thick, always lies outside the softer bony tissue, and it has an external tuberous configuration.

A sufficiently thin section through one of the larger tubers shows, even to the unaided eye, a series of curved lines concentric with the contour of the tuber. These are formed by thin bands of parallel lamellæ, and they indicate successive lines of ossification.

In sections through the periosteum and thin dense shell of small actively-growing tubers, the development of bony tissue by ossification of the deeper stratum of the periosteum (containing Tomes's and De Morgan's osteal cells) is plainly traceable.

These facts leave no doubt on our minds that the hard part of the tumour has been directly formed by the exogenous growth of successive layers of dense bony tissue under the periosteum; and our opinion is confirmed by the absence from the hard tissue of the regular Haversian systems, so characteristic of secondary bone.

The ivory-like tissue consists of a very hard matrix pervaded by numerous vascular canals. The largest of these take a generally radial direction from the interior towards the surface of the tubers, which, however, few of them quite reach, and they are connected by very frequent cross-branches of smaller diameter. Near the surface other small vascular canals occur, which quickly coalesce in short wide trunks, ending in pits beneath the periosteum. The matrix about the vascular canals is not concentrically laminated (in but a few situations it exhibits a slight and imperfect approach to this arrangement, and this in the deeper parts only), and numerous lacunæ of ordinary size and figure are irregularly packed amongst them. The thin curved bands of lamellæ concentric with the contour of the tubers (already described) are perpendicularly traversed by the principal vascular canals.

We do not find anywhere along the meeting-line of the hard and spongy bony tissues anything resembling cartilage; and we are disposed to regard the splitting of the tumour along this line as the result of violence, the place of the separation being determined by the different resistances of the two kinds of bony tissue. The intrusion of masses of the spongy tissue into the hard mass along the meeting line, and the occurrence of minute specks of spongy tissue in the midst of the hard tissue, suggest the direct continuity of these two tissues; and the microscopic appearances prove not only that this actually occurs, but also that the spongy tissue is formed by rarefaction of the hard. For near its deep limits absorption-spaces begin to appear in the hard tissue, and these, increasing in number and size and coalescing, produce large medullary spaces and cancelli. These are filled with a soft medulla carrying blood-vessels, and their walls consist of remnants of the hard primary bone, and of new lamellæ formed from the young medulla. 21*st January*, 1868.

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8. *Fibro-plastic tumour of left fibula. Amputation of leg; pyæmia; death.*

Susannah L., aged 51, was admitted into Guy's Hospital, on November 25th, 1867, suffering from cancer of the leg.

She had no recollection of the occurrence of any similar disease in other members of her family. She had always enjoyed good health until the commencement of her present illness—eleven years previously. The disease appears to have begun without assignable cause, such as a blow or other injury, and first manifested itself as a pain at the outer part of the left ankle, which was increased if she walked. The pain lasted for six weeks, and was unaccompanied by swelling, redness, or any visible change at the part, and disappeared as suddenly as it had arisen. A year afterwards a similar pain again appeared at the same place, without other signs of disease, and remained during two months. These attacks of pain, similar in all respects to that above described, afterwards arose on several occasions, being usually aggravated by cold.

About April, 1867, she first noticed a swelling about three inches above the left outer malleolus, which afterwards enlarged rapidly, and was attended with much pain. When seen on November 25th, 1867, the patient was thin; but otherwise she seemed in good general health.

At the lower part of the left leg was a tumour, extending around the whole circumference of the limb, except over the internal surface of the tibia. On the inner side, it extended to within an inch of the apex of the inner malleolus, and measured from above downwards about two inches. Externally, it reached downwards to a level with the tip of the outer malleolus and upwards from this point about four inches, and was much more prominent than at the tibial aspect of the limb. Posteriorly, it seemed to extend across the leg beneath the tendo Achillis, for the foot was extended on the leg, and just above the os calcis the tendon seemed prominent, though above that point it was lost in the substance of the tumour. The growth was immoveably fixed in the limb; the skin was tightly stretched and adherent over the tumour; at the most prominent part the cuticle was peeling, and the cutaneous capillaries were enlarged and tortuous. The surface of the growth was smooth and not nodulated. For the greater part, it felt elastic and solid; but just above and behind the inner ankle was some localized fluctuation—none at other parts. Manipulation produced pain. When the fibula was traced upwards from the ankle, it appeared to the touch that a shell of the bone passed on to the surface of the tumour. The inner surface of the tibia seemed to pass altogether beneath that portion of the growth, which from behind overlapped the posterior edge of the bone. No pulsation could be distinguished in the tumour; and the anterior and posterior tibial arteries were beating naturally. There was no swelling in the left groin or popliteal region; nor at any other part of the body.

On December 3rd, 1867, the leg was amputated by Mr. Bryant at the junction of the middle and upper thirds of the tibia. The patient was much collapsed during the operation, so that only the main arteries could be ligatured; on the occurrence of reaction some secondary hæmorrhage ensued. She progressed favourably for a few days; but rigors occurred on December 10th, and she died on December 14th, 1867.

The autopsy was superintended by Dr. Moxon, thirteen hours after death. Two lobular pyæmic patches were found in the lower lobe of the lung; also two patches of medullary cancer in the upper lobe. These cancerous infiltrations were very different from the pyæmic patches; they resisted the knife more firmly, and were more circumscribed from the rest of the pulmonary tissue. The lymphatics on the surface of the liver were plainly marked out, especially on its convexity.

The kidneys were slightly granular.

Some small veins in the stump were full of pus; most of its larger veins were filled with fibrinous clot, but some had within them a pus-like material (soft fibrine?). The vessels could be traced as high as the stump was opened—four inches from its extremity. One beaded vessel was full of pus-like material (very large lymphatic? or vein?).

The specimen was exhibited to the Society as a good example of fibro-plastic tumour developing in the fibula; it had clearly commenced in the bone and had expanded its walls, the bony shell being still traceable at the margins of the tumour. Microscopically and to the naked eye the growth displayed all the features of fibro-plastic tumours.

Mr. Thomas Bryant, 17*th December*, 1867.

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9. *Deformity of right fore-finger from necrosis of part of shaft of metacarpal phalanx.*

The subject of this deformity was a girl of 5 years of age. The middle phalanx of the finger formed an obtuse angle with the metacarpal phalanx, and the angle pointed towards the middle finger.

The deformity was caused by unequal growth of the two sides of the shaft of the metacarpal phalanx, and obliquity, at the expense of the radial side, of the articular surface of the head of the bone.

A sequestrum had formed in the radial side of the shaft of the bone, after an injury inflicted when the child was fifteen months old.

The finger was amputated because of the deformity.

Mr. John Croft, 7*th January*, 1868.

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10. *Case of rheumatic arthritis?*

W. S., aged 46, admitted into the Middlesex Hospital in October, 1865, died in July, 1866.

This patient was under my care about sixteen years ago with disease of the left knee. He went out with the joint much enlarged and partially anchylosed; but he was able to walk well upon it.

Four or five years ago he fell and fractured the neck of the left thigh-bone, for which he was treated in University College Hospital.

He went out after a prolonged stay, with a strong serviceable leg, but with great swelling about the hip.

Eighteen months after he again came to me in consequence of his right elbow-joint being diseased—much in the same way as his knee had been, many years before.

The joint was enormously distended with fluid; several loose bodies having a cartilaginous feel were observable in it, and the joint itself was so loose that the fore-arm could be brought to a right angle with the arm in every direction except immediately backwards.

There was scarcely any pain, and no tenderness. The account he gave of it was that he had had some slight rheumatic feelings in the part for two months; that the joint began to enlarge about six weeks before admission, and had rapidly got into the condition which it then presented. He had never, he said, had strong health, he had been subject to slight rheumatic pains from time to time in various joints, but not in the diseased knee; and he had suffered much from indigestion and pains about the region of the stomach.

He was under my observation for more than three years before his death. During this time he gradually lost strength, but presented no marked symptoms, save those of dyspepsia. There was always more or less tenderness over the pit of the stomach. There was a great peculiarity, however, in the condition of the urine. Mr. Heisch kindly analysed it for me from time to time. He generally passed somewhat less than the normal quantity—from thirty to thirty-five ounces per diem, but sometimes it amounted to forty-two ounces. The amount of urea was never more than a third of the normal quantity. There was often a total absence of uric acid, but the phosphates were abundant and oxalic acid was often present.

The swelling in the elbow subsided, leaving the joint as moveable as ever.

He died in a very cachectic and exhausted state, having suffered much from gastric pain and entire loss of appetite, with occasional vomiting of food and gastric secretion.

The appearances found after death are taken from the entry made by Dr. Cayley in the Post-mortem Examination book.

"The elbow was much enlarged: the end of the humerus, which is nodulated and distorted, lies entirely in front of the ulna. The synovial membrane is thickened in an extraordinary manner; in some places it appears converted into calcareous and cartilaginous plates. The cavity of the joint is greatly dilated, and contains a

large quantity of transparent viscid yellowish synovia. Lying loose in the cavity are several round and oval cartilaginous bodies, the largest of the size of a small bean; and hanging by pedicles and fringes of the synovial membrane are numerous others of similar appearance. The articular surfaces of the bones are studded with nodular elevations, partly cartilaginous and partly osseous. The end of the humerus, which is so much altered in shape as to be hardly recognizable, has become fused with the coronoid process of the ulna, which has itself become detached from the ulna, and so the fore arm

Woodcut 17.

Shows the curved process of bone in the position of the ilio-femoral ligament.

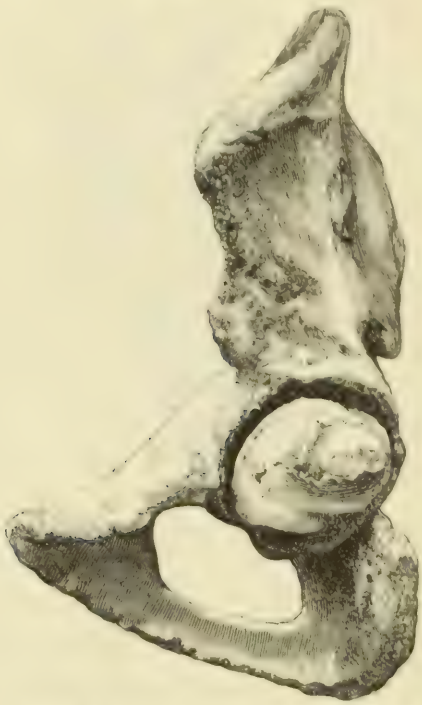
can be slipped backwards behind the humerus. The end of the radius is much distorted and denuded of cartilage, and scarcely any trace of the orbicular ligament is visible. The olecranon is enlarged and nodulated.

"The hip-joint is distorted in a most remarkable manner. The great trochanter is enormously enlarged, and rests against the outer surface of the ilium. The head of the bone lies in the glenoid cavity, where it is retained by the ligamentum teres; it is united to the shaft only by a thick fibrous band, in which are cartilaginous nodules.

In the position of the ilio-femoral ligament is a thick curved process of bone nearly four inches in length; its base, which is almost six inches in circumference, is fused with the lesser trochanter; it gradually tapers off and ends in a sharp point a little below the spine of the ilium (Fig. 17). The synovial membrane is enormously thickened, and attached to it are numerous pedunculated nodules.

"The head of the bone is covered, over the greater part of its surface, with rough nodulated cartilage, but on its under surface, where it lodged on the cup of new bone, is a patch where it is bare and smooth (Fig. 18).

Woodcut 18.



Shows the head of the femur covered with rough nodulated cartilage, and lodged in a cup of new bone.

"The knee-joint is also much distorted; the general characters resemble those of the elbow and hip. The ends of the bones are enlarged, altered in shape, and covered by rough nodulated cartilage. The synovial membrane is much thickened; and hanging to fringes of it are a large number of cartilaginous nodules of all sizes, from that of a bean to that of a millet-seed. Many of these were free in the cavity of the joint. The shafts of the long bones seem normal; the medulla is pale and gelatinous.

"A large cancerous mass was found at the pylorus, which internally presented a deep hard ulcer.

"The kidneys were atrophied, granular, and studded with minute cysts." Mr. C. De Morgan, *7th January*, 1868.

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11. *Case of excision of the head of the ulna without interference with the humerus or radius.*

T. Hall, aged 17, admitted into the Middlesex Hospital, on June 11th, 1867.

Five months before his admission he felt pain, while lifting a basket, in his left elbow, and was unable to straighten it. The part swelled, and the pain and swelling increased up to the time of his admission, and some weeks before the skin had inflamed and broken at the back and outer side of the joint.

Through this opening a probe could be passed into a cavity with carious walls in the ulna.

On the 19th June, a vertical incision having been made over the back of the joint, the head of the ulna was removed.

The ulcer in the bone was found to have penetrated to the joint; but the articular ends of the humerus and radius were quite healthy their cartilages presenting a natural colour. They were left untouched. The parts were freely and repeatedly washed out with a solution of chloride of zinc (half a drachm to the ounce).

The limb was placed on a rectangular splint. Scarcely any suppuration took place.

The elbow preserves its form, and the lad follows his occupation of shoemaking without inconvenience.

There is slight motion, which is gradually increasing.

Mr. C. De Morgan, *7th January*, 1868.

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12. *A case of rickets in which death occurred suddenly during auscultation.*

The accident which led to the exhibition of the specimen about to be described occurred in the practice of the narrator about five years ago, at the Children's Hospital.

A female child, 2 years and 8 months old, who had recently been

attacked by hooping cough, was brought as an out-patient. It had an extremely rickety conformation. Two days previously the skin had been observed to be hot, and the breathing rapid, and the day before the child was seen it had had two attacks of convulsions.

The respiration was rapid, the nostrils expanded with each breath, the skin was hot, the face puffy and congested, and the pupils dilated. The child, however, did not appear to be in any immediate danger, and, to an unpractised observer, might have seemed not seriously ill.

With the impression that the child was the subject of pneumonia, it was thought necessary to examine the chest, and the mother was directed to place it so that the back was within reach of the stethoscope. She laid it across her knees with the head hanging down. The instrument was scarcely adjusted before the mother, alarmed by the sudden stillness of the infant, raised it hastily. The child was dead. Its face was more congested than before. Cold water was dashed upon the face and poured upon the head; ammonia was held to the nose, and put into the mouth; artificial respiration was used, but all without avail; the child never made any effort to breathe again. It was not in the position described for more than half a minute.

At the *post-mortem* examination it was found that the bones were extremely affected by rickets. There were large nodules on the sternal ends of the ribs; the articular ends of the long bones were enlarged; and the bones of the skull were imperfectly ossified, as was shown by the open state of the fontanelles.

The brain was congested, the puncta numerous, the large veins full. The ventricles, however, were empty, as in health; and beyond the congestion described there was no alteration in the contents of the skull.

The lower part of the upper lobe of the right lung gave evidence of lobular pneumonia, being spotted with small patches of a pale fawn colour. The small portion of lung thus affected sank in water. There were also a few small spots of collapse in the pulmonary substance. The bronchial tubes were slightly red, and contained a trifling amount of mucus.

The right ventricle of the heart was quite open; the left, closely contracted.

All the other organs were natural.

The specimen exhibited consisted of the sternum and the attached ends of the ribs, showing their rickety enlargements.

Remarks.—This case has great practical interest, and may serve as a warning to future auscultators.

The manner in which death took place and the condition of the body afterwards seemed to prove that the cause of death was apnœa. The breathing ceased without any convulsive movement, or any disturbance which could be referred to the brain. The face was congested with venous blood; the right side of the heart was widely open, the left closely contracted, as is the case when death has occurred from cessation of the respiratory function.

Looking at the circumstances under which death occurred, it is not easy to avoid the conclusion that the position in which the child was placed was the immediate cause of its decease.

The unnatural flexibility of the ribs, owing to their rickety state, rendered the thorax an exceedingly imperfect instrument for the inflation of the lungs. The muscular weakness which is associated with rickets contributed to lessen the power of inspiration. The respiratory function was further impaired by an attack of pneumonia. Under these disadvantageous circumstances the child was placed in a position which opposed mechanical obstacles to inspiration. The belly was compressed, so as to hinder the descent of the diaphragm, which was probably the chief means by which inspiration was accomplished; the capacity of the chest was lessened by pressure upon the sternum, and, with feeble muscles and flexible ribs, the forces at command were insufficient to maintain the already failing function. The difficulties superadded by position were enough to arrest the breathing, already dangerously impeded by disease.

The case is placed upon record to serve as a warning against the placing of children, for purposes of auscultation, in a posture which cannot fail to interfere more or less with inspiration and may be attended with danger, should there be, as in this case and in too many others, a concurrence of pulmonary disease with rickety softening of the skeleton.

Dr. Dickinson, *4th February*, 1868.

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13. *Chronic arthritis of the knee-joint.*

The following case occurred under the care of Mr. Marshall, at University College Hospital, and the specimen is preserved in the College museum.

History.—William A., aged 44, a seaman, gave the following

account of his history :- Nineteen years ago he fell from the yard arm of a vessel and struck his left knee, receiving a large wound on the outer side, which healed readily. Two years later, during a voyage to St. Michael's, the left knee became painful and much swollen; after some days these symptoms diminished; but he continued to feel some pain and stiffness when he went aloft.

Eight years later he married, and then went to the North Faroe fishery, where he was greatly overworked and much exposed to cold and wet. The left knee and thigh became much swollen, and never returned to their natural size. On his return he was admitted into the Dreadnought Hospital, where he remained four months and greatly improved, but left with a loose joint.

Some months later an abscess formed in the thigh above the joint, and another subsequently opened below the patella; he was admitted into University College Hospital, under Mr. Marshall, who removed some carious bone from the lower end of the femur. After leaving the hospital he remained well for two years, when another abscess formed. He has, however, been able to get about, wearing a splint, until recently, when he became much worse.

On admission, his left knee was found much enlarged; the swelling was firm; skin dark and mottled; three sinuses opened on the outer, inner, and posterior surface of the joint, from which a thin dark-coloured pus escaped.

No dead bone could be detected on passing the probe through these sinuses. The joint was immoveable; the lower end of the femur appeared to be greatly enlarged and anchylosed to the tibia; the patella was also firmly fixed.

Above the joint there was great mobility; and it appeared as if an ununited fracture of the femur existed immediately above the condyles.

The general condition of the patient did not warrant any operative interference, and a few weeks later he was seized with pyæmic symptoms and died.

On *post-mortem* examination, no secondary abscesses were found in any of his internal organs.

A long sinus extended along the bone from the knee to the iliac crest on the outer side, and crossed the limb transversely to the inner side of the joint. The muscular and tendinous structures around the knee were agglutinated together by old-standing inflammation. On opening the joint it was found that the carious end of the femur was

playing in a large cup-shaped cavity formed by the expanded end of the tibia, around which extensive deposits of new bone had taken place, especially in the capsule of the joint, thus fixing the patella. The cavity of the joint contained the remains of softened and pulpy ligamentous and synovial structures, with loose fragments of carious bone and a large quantity of grumous pus.

There had been great loss of substance from the lower end of the femur, almost the entire substance of both condyles having been lost from carious disintegration. The characters of the new deposits in the capsule and around the head of the tibia appeared analogous to those which commonly occur in cases of chronic rheumatic arthritis; but it is undoubtedly rare to meet with this disease conjoined with carious destruction of an adjoining bone.

It is even more rare to meet with cases of ordinary inflammation of the knee-joint dependent upon caries of the lower end of the femur, accompanied by so extensive a deposit of new bone in the adjacent structures.

The fact of the disease having originated in an injury received many years ago, and having been constantly re-excited by exposure to cold and to fatigue, may perhaps account for the unusual features presented by the case. Mr. Alexander Bruce, 18*th February*, 1868.

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14. *Fracture of the base of the skull.*

This specimen illustrates in an interesting manner the conditions necessary for the production of certain symptoms connected with fracture of the base of the skull.

J. M., aged 22, a plate-layer on a railway, was admitted under Mr. Marshall, into University College Hospital. He had been struck by an engine on the back of his head and driven forwards for some yards, falling forwards upon his forehead.

On admission, he was unconscious; pupils dilated; breathing stertorous; bleeding from both nostrils and from the right ear. A depression could be distinctly felt above the right orbit and a lacerated wound existed on the left side of the head, the bone being exposed for about two inches. Slight ecchymosis of the left eye. Some hours later the pulse was weak, the pupils contracted, surface cold and pale. The ecchymosis of the orbit markedly increased; and watery fluid was mixed with the blood which escaped from the right ear. Patient died in about eight hours.

Post-mortem.—There was extensive extravasation over the right frontal bone, which was fissured from the superorbital foramen to the frontal eminence. Extravasation was also marked at the back of the head, where a fracture extended through the occipital bone. Much blood was effused both above and below the dura mater in the frontal and occipital regions, where some laceration of the brain existed. Small extravasations also existed in the substance of the anterior and middle lobes.

Traversing the left petrous bone, immediately internal to the attachment of the membrana tympani, was a deep fissure, which extended forwards into the anterior fossa and backwards into the middle fossa, completely detaching the outer part of the bone from its connections in the base of the skull. On the right side a similar fracture divided the petrous bone into two parts, but was connected with another fissure, which traversed the meatus auditorius and had caused rupture of the membrana tympani. It appears therefore that hæmorrhage from the ear followed by discharge of watery fluid can only take place under certain conditions, which may or may not accompany fracture of the base of the skull. Thus, if the line of fracture be internal to the attachment of the membrana tympani, these signs will not appear, whereas a less severe fracture of the petrous bone passing external to the membrane, or causing its rupture, may be followed by hæmorrhage and discharge of watery fluid. It would be of some interest to observe whether in the former class of cases the serous fluid passes through the Eustachian tube and escapes by the nose, or passes into the pharynx. The specimen is preserved in the museum of University College.

Mr. Alexander Bruce, 18*th February*, 1868.

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15. *Recurrent tumour of the face* (*Enchondroma*).

The tumour consisted of:—

1. A large rounded mass presenting the appearance of a loose bony cyst, from which laminæ and spicula protruded inwards into the substance of the tumour. One surface was rounded and loosely covered by a thick periosteum. The remainder of the surface was rough and broken, the intervals between the bones being filled by a soft reddish gelatinous material.

2. A smaller mass, with an oval convex surface, covered with mucous

membrane (which protruded into the mouth). The remainder of the surface presented the same appearance as the preceding.

3. Large and small pieces of the substance of the tumour, as described above.

4. A small patella-shaped nodule, weighing ninety grains, being a thick bony cyst covered by periosteum, which when cut into presented an almost cartilaginous appearance.

The bone throughout was in the form of thin brittle laminæ hardest and thickest in No. 4.

The weight of the entire tumour was nine ounces.

A portion of the frontal bone and of the dura mater lining it was also exhibited, and showed great expansion of the frontal sinuses, with considerable thinning of their walls, so that the bony wall of the cranium at this point was no thicker than paper and had broken in the removal of the brain. There was no appearance of the growth to be found in the sinus.

The following is the history of the patient:—

Henry M., aged 34, was admitted into University College Hospital under Mr. Heath, on 1st January, 1868, with a large tumour of the right side of the face.

When about 17 years of age, he noticed a pimple on the right side of the nose, which increased pretty rapidly; and three months after he went into St. Thomas's Hospital (1851), when Mr. Le Gros Clark operated and removed a tumour as large as a walnut. He quite recovered, and was well for a few months; but within a year the tumour had returned. He was then admitted into King's College Hospital, under Mr. Partridge, who, in June, 1852, removed the tumour, which was of an osteo-cartilaginous character, oblong in shape, and of the size of a large walnut, projecting slightly into the antrum and involving the nasal process of the superior maxillary bone, but in no way involving the mouth or orbit. From this operation the patient made a good recovery, except that a small fistulous opening was left in the cheek.

The man continued in good health until 1857, when he went to America, and soon after arriving there he found the tumour beginning to appear again; and in 1860 Professor Gunn operated, at Anne Harbour, in the State of Michigan, and removed the entire right upper jaw, with the greater part of the tumour, but left a portion at the inner side of the orbit. This soon began to grow again rapidly, and the tumour projected on the face. The surgeons at Maple Rapids,

where he lived, wanted to operate again, but the patient declined, and returned to England in 1865. Soon after this an abscess formed in the upper part of the tumour, which was lanced with great relief; but the incision thus made has never closed, owing to the stretching of the skin by the tumour.

The patient's appearance on admission was most unsightly, the right side of the face being greatly disfigured by a large tumour, by which the eye was thrust completely aside, but without loss of vision (Fig. 19). Immediately to the inner side of the eye was an open

Woodcut 19.

Shows the appearance of the patient at the time of his admission into the hospital.

granulating sore of the size of a florin, the result of the incision for the evacuation of matter already referred to. The tumour appeared externally to consist of two portions, separated by a horizontal sulcus, at the bottom of which the fistulous opening resulting from the second operation was still visible. The upper and more prominent portion had invaded the orbit, reaching to its upper border, and extended beyond the middle line of the nose. A small portion of it had within the last two months projected through the left nasal bone. The lower portion of the tumour involved the ala of the nose and

adjacent portion of the cheek, both of which were much distorted; on a small projecting portion of this the skin was adherent. Both nostrils were completely blocked, and had been so for months. Within the mouth it was seen that the whole of the right side of the hard palate had been removed, and in its place there was a smooth, red, oval mass, coming down to the level of the teeth of the opposite side. The scars in the middle line of the lip and on the cheek, resulting from former operations, were still visible.

The tumour was solid and firm, and not tender to the touch, the most prominent point being apparently osseous. There was no enlargement of the glands in the neck or elsewhere, and the patient appeared in good health. The tumour had made decided progress within the last few months, and he was anxious to have it removed, to which, after a consultation with his colleagues, Mr. Heath agreed.

The operation was performed on the 8th January, 1868, by laying open the face and removing the tumour piecemeal and principally with the fingers. The patient recovered perfectly and rapidly from the operation, and was up and about. He unfortunately went out on a cold day, nearly a month after the operation, and got erysipelas of the face. Pyæmia then came on, and he died six weeks after the operation (*vide Lancet*, May 9th, 1868).

Mr. Christopher Heath, *3rd March*, 1868.

Report of the Committee on Morbid Growths upon Mr. Heath's recurrent tumour (*enchondroma*) *of the face.*—The principal mass not being immersed in any preservative fluid, our account of the fine structure of this tumour is mainly drawn from the microscopic appearances exhibited from two smaller tubers, which had been placed in a solution of chromic acid. These consist of a thin external incomplete bony shell, coated by a fibrous membrane and enclosing a soft tissue penetrated by bony spicula. The external membrane is composed of wavy bundles of common connective tissue interwoven in planes generally parallel to the surface of the underlying bone, and enclosing groups of fat cells. Beneath this outer stratum there is a deeper layer, immediately resting upon the bone, composed chiefly of small, closely-packed cells, evidently the equivalent of the osteogenic layer of periosteum, and ministering as this does to the growth of the bony shell. This latter is lamellated parallel to its outer surface, and it has a true osseous structure. The enclosed soft tissue consists in greatest part of cartilage, the characters of which, although varying con-

siderably, are everywhere unmistakeable. (See Plate XI.) The cartilage-capsules in some situations are very large, and so crowded as nearly to exclude the intercellular substance and approximate to a colloid structure (Plate XI., Fig. 3); while in other parts the two tissues exist in nearly equal quantities, and here many of the capsules exhibit the concentric rings indicative of successive layers, which are not uncommonly seen in old and slowly-growing enchondromata (Plate XI., Fig. 2). Again, in other places the capsules are much smaller and more or less sparsely scattered in the fibrous intercellular substance. This latter generally resembles that of fibro-cartilage; and it presents the usual variations in the degree of fibrillation, in the size and stiffness of the fibres, and in their combination in finer and coarser bundles and nets (Plate XI. Fig. 1).

The bony spicula imbedded in the soft tissue exhibit indications of active growth and dissolution (Plate XI. Fig. 4). Their growth takes place by the ossification of a rich cell-tissue, traceable to proliferation of the cartilage-cells. The growing surfaces generally have an even contour, and the bone has a true osseous structure; but here and there it encloses small specks of merely calcified cartilage containing large capsules, just as small intruding portions of the articular lamella are often seen shut in by true bone in vertical sections of joints. The wasting surfaces of the spicula are marked by bays and indentations identical in figure with the absorption-spaces in normal bone, and the bone is replaced by a tissue composed of small cells with a fibrillated intercellular substance, identical anatomically with the young medulla filling the absorption-spaces of normal primary cartilage-bone.

The structure of this tumour leaves no doubt that it belongs to the category of the Enchondromata. *7th April*, 1868.

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16. *Cranio-facial enchondroma.*

The accompanying morbid specimens were taken from a man, aged 22, who was sent to the care of Mr. Moore, in the Middlesex Hospital, by Mr. S. C. Noble, of Kendal.

The general external appearance of the facial tumour for which the patient sought relief may be best comprehended on inspecting the photographs. I am indebted for them to the skill of Dr. H. G. Wright. (See Figs. 20 and 21.)

DESCRIPTION OF PLATE XI.

Figs. 1, 2, 3, and 4 illustrate the Report of the Committee on Morbid Growths on Mr. Heath's Specimen of Enchondroma of the Bones of the Face. From drawings by Mr. Hulke, magnified 220 diameters (p. 328).

Fig. 1. Large cartilage-corpuscles lying in a finely fibrillated matrix, which is traversed by stouter stiff fibres.

Fig. 2. Large cartilage-corpuscles, some of which show several concentric rings imbedded in a finely fibrillated intercellular tissue.

Fig. 3. Very swollen cartilage-corpuscles, closely crowded, and separated by a very small quantity of fibrous tissue, which, however, predominates at *a*, and here encloses small and scattered cartilage-cells. This figure represents a transition to colloid structure.

Fig. 4. A bony spiculum. *a*, Ossifying tissue, evolved out of the cartilage-corpuscles, resting on the growing surface; *b*, the wasting surface of the spiculum coated with a nascent medulla-like tissue.

Figs. 5 and 6 illustrate the Report of the Committee on Morbid Growths on Mr. Birkett's Sub-cutaneous Tumour removed from the Back. From drawings by Dr. J. Burdon Sanderson (p. 390).

Fig. 5. Section of the tumour seen under a low power ($\frac{1}{2}$-inch objective), showing the characteristic arrangement of the cells, which are contained in cavities that look as if they were hollowed out of a transparent, finely granular, or fibrillated stroma. These cavities have remarkably well-defined outlines. Their form is canalicular.

Fig. 6. Band of fibrous tissue (*a*) with adjoining cell-tissue (*b*). Magnified 350 diameters.

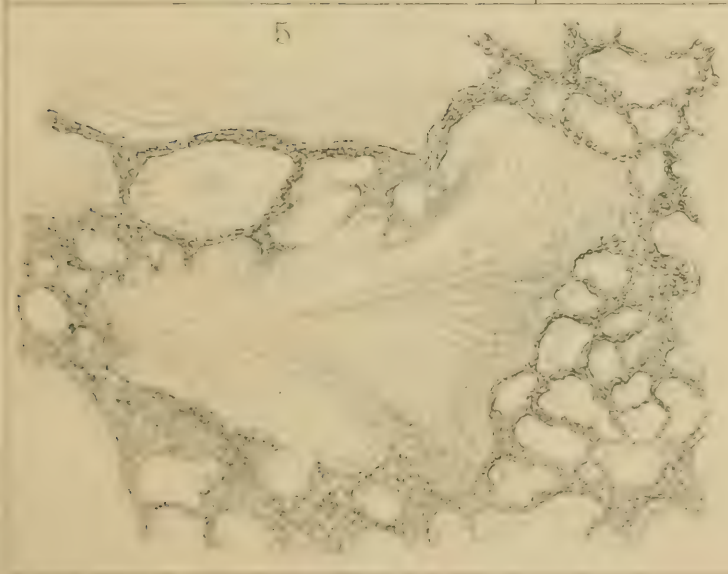
3

a

4

a

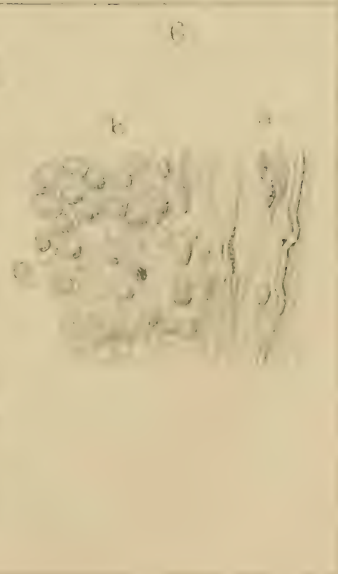
5



6

b

a



Woodcut 20.

Represents the appearance of the patient—full face. Copied from a photograph by Dr. H. G. Wright.

Woodcut 21.

Represents the appearance of the patient—profile view. Copied from a photograph by Dr. H. G. Wright.

The skin covering this vast protuberance was healthy, and slid easily over the tumour, as the scalp does on the cranium. At the uneven prominence in the front it was very thin, but even there it was not actually adherent. From its highest part on the forehead to an abrupt transverse line which could be felt about one inch above the extremity of the nose, the whole projection was bony and perfectly smooth, the frontal and nasal bones being elevated and expanded over it in front, and the æthmoid, superior maxillary, and lacrymal, with its groove, covering it laterally. The superciliary ridges could be felt over the eyes, but were much displaced; they were directed rather forward than transversely, so that lines prolonged from them would have met about six inches in front of the face. The eyelids were stretched. They could be only partially closed over the protruding eyeballs, and there was occasional epiphora. The prominent part of the tumour below and in front of the right eye had perforated the facial bone, and presented a nodular surface: some of the nodules were bony, others had the consistence of cartilage. There was a fistula half an inch in front of the commissure of the left eyelids, above what appeared to be the groove of the lacrymal bone; and on the right side was a similar orifice, but situated at the distance of an inch and a half from the inner canthus. Through this aperture mucus and pus were continually oozing. A third fistula opened below the left malar bone. The projection of the tumour was entirely in parts anterior to the temporal fossæ; and they were neither tumid nor filled out, but even more than naturally hollow. At the zygomas also, at the malar bones, and at the hinder portions of the bodies of the superior maxillaries, the head retained its proper width. In front of these parts the face was both lengthened and projected. From the upper alveolar ridge the six front teeth were inclined back toward the lower, but without reaching them. The line of the upper teeth was uneven. The movements of the lower jaw were free. There was a slight convexity in the middle of the arch of the hard palate, more observable on the right than on the left side. The soft palate was not altered in shape or position, and was freely moveable. The fauces and pharynx also were healthy; though rather small, they were not invaded or compressed by any portion of the tumour.

Flattened and covered with mucus and pus, the tumour was visible in the orifices of the nostrils. It descended lowest in the right nostril, and widened it to the diameter of an inch, while the left nostril was only half that size. The impression conveyed on touching the mass in

the nostrils was that of a rather firm tumour beneath soft œdematous mucous membrane. A probe could be passed up the nostril, between the tumour and the maxilla, on the left side three inches, on the right two inches. When the tumour itself was punctured with a needle, it was found on the left side to be mostly soft, and the needle reached to the level of the inner canthus of the eye; but on the right side a moveable osseous fragment was felt an inch from the surface, and at two inches there was immoveable rock-like bone. The puncture was not painful. A probe introduced into the fistulous orifices met bare and rugged bone on both sides.

No additional tumours could be found in the cranium; but on the great trochanters there were small and nearly symmetrical exostoses. The cervical glands were unaffected.

The tumour caused no pain and no cerebral symptoms of any kind. All the senses were naturally acute, except that of smell, which was lost, and the sight of the right eye, which was impaired. His arms were slender, his lower limbs muscular, his sleep sound, appetite and digestive functions healthy, urine free from albumen.

The following history of the case is taken from that published by Mr. Noble, in the *Medical Times and Gazette*, for October 18th, 1862.

The patient first became aware of anything wrong in January, 1857, when he fell in the act of sliding, and, as he supposes, broke his nose. For four months after this accident he could, by squeezing the upper part of his nose, cause clotted blood to flow from his nostrils; at the end of that time a soft growth appeared in the right nostril, which blocked up the nasal passage, and the clots ceased to flow. Two months later the left nostril became obstructed by the growth. The right side of the nose, then the whole nasal ridge, and afterwards the forehead, began to protrude, and were in two or three months decidedly prominent. In August, 1858, an abscess formed in front of the right eye; smaller gatherings broke near the right inner canthus, discharging pus and a jelly-like fluid, and the right nasal duct became obstructed.

When first seen by Mr. Noble, early in 1859, the whole of the nose, both anteriorly and laterally, as well as the centre of the brow, was enlarged, and protruded to an extraordinary extent. The right eye was pushed outwards in consequence of the encroachment of the tumour upon the inner wall of the orbit. The left eye was similarly displaced, but to a less degree. The vision of the left eye was natural, that of the right eye rather obscured. The tears flowed down the cheeks; and from two or three small openings near the inner angle of

the right eye about an ounce of gelatinous matter streaked with blood was discharged daily. There was also a bloody discharge from the nostrils. Both nostrils were blocked up by a firm gristly tumour. The bones of the nose and face covering the tumour were so expanded as to be quite wafer-like in their feel, so much so indeed that it appeared as though the least pressure would have caused them to break: as, however, the disease advanced, they gradually became dense and firm. The frontal bone, on the contrary, was from the first thick and unyielding.

During 1859 and 1860 the expansion of the face by the growth of the tumour increased, and the discharges continued. In 1861 the gelatinous discharge began to diminish and then ceased, the openings through which it had escaped closing up both by cicatrization of the skin and a growth of bone.

In the autumn of 1862 the following were the measurements of the whole protuberance.

1. In a transverse direction:—

Across the protrusion on the frontal bone, four and a half inches.

From inner angle of right to inner angle of left eye, five inches.

From the protrusion below the right eye to the left side of the nose, six and a quarter inches.

Across the lower end of the nose, three and a half inches.

2. In a vertical direction:—

From the protrusion on the frontal bone to the end of the nose, six and a half inches.

Mr. Noble has obliged me with the further history of the case up to the present time, 1864.

In the early part of March, 1863, after a few days of pain, accompanied with redness of the skin, an abscess presented itself about one and a half inch to the inner side of the inner angle of the right eye. It burst near the situation of the former openings from which the jelly-like discharge had proceeded, and it discharged about a teacupful of thick purulent matter. Two or three days afterwards another abscess formed on the left cheek, which also burst and discharged a considerable quantity of matter, but thin and more watery in character. Since that time there has been constant discharge from the sinuses left by the abscesses. There is a decided recent increase of the tumour on the left and lower part of the nose. The present measurements, in the summer of 1864, are:—

1. In a transverse direction:—

Across the protrusion on the frontal bone, five inches.

From the inner angle of the right eye to the inner angle of the left eye, four and a half inches.

From the protrusion below the right eye to the left side of the nose, six and a half inches.

Across the lower end of the nose, five inches.

2. In a vertical direction:—

From protrusion on frontal bone to the end of nose, six and a half inches.

The observation of the case led me to the following conclusions:—

1. That the disease was of innocent nature.

2. That it was situated in the anterior part of the nares, not further back than the level of the bony palate.

3. That beyond superficially impressing the base, it did not encroach on the cavity of the cranium.

4. That it supplanted the structures between the orbits, and compressed the right optic nerve in front of the optic foramen.

5. That it was uncertain whether its base were attached by bone, and whether it had grown forward from the sphenoid body, or backward from the posterior surface of the nasal bones, or had sprung from the cartilaginous septum of the nares, or from the membrane of any of the air-cells.

6. That a tumour of this nature and in this position might be capable of complete removal; but that the possibility of extirpation could only be settled in the course of an attempt to extract it.

7. That from the magnitude of the tumour, or from obstacles which might be encountered in the course of this attempt, it might be advisable to interrupt the operation and proceed to its termination at a later period.

The doubt and the risk were amply explained to the patient; and he decided, without hesitation, to undergo whatever operation might be required. In the course of the operation, however, he died from interruption of breathing through the mouth, an event which might probably have been obviated by a preliminary opening of the windpipe in the neck.

When the whole relations of the tumour had been displayed by sections and by maceration, it was found to be for the most part contained in, and to have apparently originated within, the septum of the nose. It there formed a globular mass, smoothly covered on its sides, as well as above and below, by the two widely-parted layers of

Schneiderian membrane belonging to the septum. It did not extend quite to the back of the septum, or to the floor of the nostrils, between which and the tumour the cartilaginous part of the septum lay crumpled, but otherwise healthy. At the top of the septum the tumour narrowed to a breadth of less than half an inch; and it was incorporated with the base of the cranium from the lower part of the body and right internal pterygoid process of the sphenoid forward, the crista galli being involved in the disease, but not the cribriform plates or air-cells of the æthmoid bone. A little further forward the narrow upper attachment of the tumour (or of the septum, for they were identified with one another) widened, and the nasal nerves, which passed on each side of it, were more than an inch asunder. Yet further forward, in front of this constriction, the growth expanded into, and was united with, the frontal, nasal, and right superior maxillary bones. It appeared to have chiefly grown by insinuating itself along the inner surfaces of these bones, the external parts of them, though expanded, being everywhere smooth and healthy, and the diseased mass within them thinning out at its margin inside the superior maxillary into no more than such thin, porous bone as is commonly referred to periostitis. At other parts it stopped abruptly, as at the sphenoid and lower part of the septum narium, or was limited by hypertrophy of the natural bone, as at the frontal.

In the direction towards the cranial cavity, as on their external aspect, the bones presented no disease. The morbid growth occupied their substance only or their surface towards the nares. Between the foramen cæcum, however, and the pituitary fossa, the mesial part of the base of the skull was thickened to about half an inch, and rose to that height in a low massive arch above its natural level. The basilar process and the sphenoid, above its sinuses, were healthy.

The surface of the tumour was soft; the central parts, and those attached to the natural bones, were chiefly bony; but the osseous substance was riddled and excavated into cells, which were occupied by the softer parts of the disease. This latter substance was partly mucus, which slowly escaped in long tenacious and almost transparent strings from sections of the tumour, and partly soft cartilage. The largest space of all was in the septum at the back of the tumour. This would have held a hen's egg. It was lined by a soft, thick, pulpy membrane, and it opened posteriorly on the left of the septum by a small aperture surrounded with pendulous overgrowths of mucous membrane. It also communicated with the sinus on the left side of

the face, through which mucous or gelatinous matter had escaped during life. The bony part of the tumour, when macerated, was porous, and resembled that formed around a sequestrum. Some crater-like cloacæ opened through it in various directions.

The condition of the natural structures differed in relation to the morbid growth. Arteries passed through bony canals in it; nerves were stretched and displaced, but uninjured by it; mucous membrane in contact with it was hypertrophied or atrophied; cartilage was unaltered beyond being compressed by it; bones separated from it by mucous membrane became attenuated and distorted; but none of these parts adopted the character of the disease. The case was otherwise with bones which came into contact with the tumour; these united with its substance and adopted its mode of growth. Not only was this apparent in the extension of the disease along the surface and in the substance of the affected bones, but also by the commencement of the same kind of growth in healthy parts of the bones, where the mucous membrane once separating them from the tumour had been destroyed by its pressure.

The space required for so large a tumour was obtained by the separation of the orbits and outer walls of the nostrils, by protrusion and overgrowth of the frontal and nasal bones, and by a vertical elongation of the front of the superior maxillary bones. In consequence of this last change, the level of the upper alveolar ridge was disturbed, the last molar teeth being scarcely depressed, but the incisors being one inch lower than natural. Secondary distortions of the bones had also occurred. The malars were flattened, and with the pterygoid processes, the zygomas, and the vertical rami of the lower jaw, were stretched downwards and forwards; the orbits were narrowed, and their inner walls much elongated.

Mr. C. H. Moore, *3rd March*, 1868.

Report of the Committee on Morbid Growths upon Mr. Moore's tumour (myxoma) of skull.—The specimens, which have been for some months mounted as museum preparations, consist of the two halves of the skull, one macerated and dry, the other in spirit. To the base of the skull there is attached a large tuberous mass, which projects forwards along the nasal passages, distending these and the bones of the face. Its free surface is bounded by a more or less perfect shell of bone, which is overlaid by periosteum and by other soft tissues, which vary in different situations. The longitudinal section of the

skull, which bisects the tumour, shows that this consists mainly of a soft and a bony tissue, enclosing cavities, the contents of which have escaped. The soft tissue is composed of a web of varying closeness and intricacy, the constituent fibres of which are really the long and much divided branches of stellate (and less frequently of spindle-shaped) cells, which closely resemble those that are frequently evolved in the vitreous humour of the eye during chronic irritative processes, and which belong to that form of connective tissue that has its normal type in the flickering transparent tissue of the umbilical cord; there is therefore very little common wavy connective tissue in it. In this fibrous web are imbedded large numbers of roundish, unbranched cells, ranging from less than $\frac{1}{4300}''$ in diameter to $\frac{1}{860}''$. The smaller cells are more abundant than the larger, and many of those which average $\frac{1}{2150}''$ contain a large circular nucleus. This is often wanting in the larger cells, which are more or less filled with oil-globules. (See Plate XII., Figs. 1, 2, 3, and 4.) The proportions of the branched connective tissue-corpuscles, with their resulting fibrous web, and of the roundish cells (which we also regard as a form of connective tissue) differ much in different parts of the tumour; but the branched cells and fibrous tissue generally predominate, and we found only a few places where they were nearly excluded by the roundish cells.

From the openness of the fibrous web, it must have contained a large quantity of a fluid intercellular substance, the chemical nature of which we cannot now determine, as it has drained away, but which in the fresh state had the rough physical characters of mucin—a transparent, glairy, viscid fluid, which could be drawn out in strings.

The hard tissue, which is intermingled in varying proportions with the soft, is a true bone. It has a finely-porous texture, roughly comparable to that of pumice. It is formed by the ossification of the soft tissue, and it shows signs of active growth and waste. The exterior bony shell is produced by the deposit of compact bone under the periosteal membrane, which becomes rarefied at a short distance from the surface. All the bones to which the tumour is attached are enlarged, and they show unmistakeable signs of active growth.

From an anatomical point of view we place this tumour in the class myxoma of Virchow, which not infrequently attacks the bones of the face. It probably has a close affinity with Paget's soft, flickering enchondromata; but it differs from the usual firm kinds of enchondroma in the absence of the simpler forms of cartilage-corpuscles met with in them. Again, it is allied to certain forms of colloid; but it differs

DESCRIPTION OF PLATE XII.

Figs. 1, 2, 3, and 4 illustrate the Report of the Committee on Morbid Growths on Mr. Moore's Case of Myxoma of the Bones of the Skull (p. 339). From drawings by Mr. Hulke, magnified 220 diameters.

Fig 1. An open web of branched corpuscles, in which small round corpuscles are sparsely scattered.

Fig. 2. A similar web, in which the round corpuscles are more abundant.

Fig. 3. A similar web containing large, round, unbranched corpuscles enclosing oil-globules.

Fig. 4. Long spindle and round cells.

Figs. 5 and 6 illustrate the Report of the Committee on Morbid Growths on two Tumours of the Breast exhibited by Mr. De Morgan. From drawings by Mr. Hulke, magnified 240 diameters.

Fig. 5. Shows the microscopic structure of the tumour described at p. 393, composed of large bundles of stout fibres, scattered through which are withered mammary tubules (see p. 394).

Fig. 6. Shows the microscopic structure of the tumour described at p. 394, composed of enlarged gland-tubes, with intervening fibrillated tissue (see p. 397).

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from these in the absence of the typical alveolar structure; and lastly, it corresponds to some forms of fibro-cellular tumours of other authors. *6th April*, 1868.

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17. *A case of comminuted compound fracture of the tibia, with fracture of the fibula.*

This case is of some interest, as showing the large amount of reparation that may, under favourable circumstances, take place. The subject of this lesion, J. D., aged 15, was admitted into the hospital on January 17th, 1867.

The tibia, about three inches below the articular surface, was extensively comminuted by a heavy mass of metal having fallen on the leg; and considerable portions of the upper and lower extremities of the bone were seen denuded of periosteum, at the bottom of an obliquely transverse wound, about three inches in length. The fibula, so far as could be ascertained, was fractured, but not comminuted; and the mass of tissues forming the calf of the leg was apparently uninjured, the energy of the blow having been principally spent on the tibia. As the man was of temperate habits, and apparently of a vigorous constitution, I resolved to attempt to save the limb, in opposition to the opinion of some of my colleagues, and in spite of the extensive suppuration that would necessarily ensue.

The limb was therefore carefully extended on a splint, there being an interval of an inch between the shaft and head of the tibia. For about a fortnight there was a good deal of unhealthy grumous discharge, but the wound then assumed and maintained a healthy aspect. The fibula became firmly united, many fragments of the tibia were from time to time detached, and the denuded ends of the bone exfoliated.

In May, although there was very little, if any, consolidation of the tibia, he began to move about the ward on crutches.

The filling up of the wound progressed gradually, and before I left London, at the end of July, consolidation had evidently progressed favourably and the limb possessed considerable rigidity.

At an unlucky moment, during my absence, he tried to sustain his own weight on his foot; but feeling the leg give way, he immediately desisted. Unfortunately the mischief was done: in twenty-four hours he began to complain of pain in the wound; this was followed by inflammation and sloughing, and a few days after my return, in the middle

of September, copious arterial haemorrhage took place from the bottom of a deep sloughy wound, and the patient had become considerably depressed: immediate amputation was performed, and the patient slowly recovered.

The preparation shows that the separated portions of the tibia had become connected by two bands or pillars of new osseous tissue; of these the posterior, formed probably of some consolidated fragments, was much the stronger; the anterior, consisting only of newly-formed cancellous tissue, was doubtless slightly crushed by the weight of the body. This led to the subsequent inflammation and destruction of tissue, which rendered amputation necessary.

Little doubt can be entertained that if sufficient time (probably another month or six weeks) had been allowed for the consolidation of the newly-formed bone, the weight of the body would have been sustained and a perfectly useful limb preserved.

Mr. C. Brooke, *3rd March*, 1868.

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18. *Specimens showing the process of repair after resection of the knee-joint.*

Case I. These bones (that is, the lower end of the femur and the upper ends of the bones of the leg) were removed by amputation from a boy aged 13, who had undergone resection of the knee-joint eleven months previously.

The following is the history of his case:

T. J., aged 12, came into the Children's Hospital, in January, 1867. He had suffered from disease of the right knee-joint for eight months; his joint was extremely painful and swollen, and his constitutional symptoms were severe: a quantity of pus was let out of the joint with but temporary relief.

As the boy was losing ground the joint was excised. The patella was removed, and a thin slice both of the femur and tibia. At the time of the operation, a large abscess was met with in front of the femur, and another behind the tibia; drainage-tubes were passed through these abscesses. An abscess was found in the head of the tibia; this was gouged out, and the compact tissue of the bone was cut away opposite to the cavity, so as to give exit to the discharge.

The bones came into good contact. After a precarious convalescence, and by means of the unwearied attentions of the lady-

nurse, the boy recovered so as to be able to go to Margate, with firm union of the bone and in fair general health.

The discharge from the sinuses was at all times profuse, and the neighbourhood of the knee-joint was extremely swollen and painful. In January, 1868, an operation was attempted, to remove the dead bone, which was evidently the source of irritation; this was unsuccessful, and on 29th January the limb was amputated.

The specimen shows firm bony union, so close that the exact line of union between the femur and tibia is not discernible throughout the whole surface of contact. The cartilaginous epiphysial line is intact and natural in both these bones. The uniting bone-tissue is cancellous in structure, but more firm than the cancellated tissue in the other part of the end of the bone. The tibia and femur were found closely knit together on their outer surfaces by very firm fibrous tissue, probably the remains of the capsule of the knee-joint.

There is reason to believe that not only has there been a perfect osseous union between the tibia and femur, but that a growth of new bone has taken place between the two epiphysial lines.

The back of the femur, just above its junction with the tibia, was extensively carious, and was evidently the source of the continued suppuration and irritation of the soft parts, which at last necessitated amputation.

Case II. The part removed by amputation from a case in which resection of the knee had been performed eight months previously.

The patient in this case was $7\frac{1}{2}$ years old when his joint was resected for a disease of the joints, which had lasted eighteen months. At the time of the operation there were great synovial enlargements; and matter was being discharged from several openings communicating with the joints.

On January 7th, 1867, resection was performed by Mr. Smith, in the Children's Hospital. The external wound rapidly healed, except one or two sinuses; the bones, however, though remaining in good position, never united; and, eight months after the first operation, the limb was amputated on account of the state of the boy's general health.

The specimen shows the bones in good position and in close contact; the epiphysial cartilages are uninjured by the operation and healthy in appearance.

The texture of the bones seems perfectly natural and healthy. There is no union, either fibrous or bony, between the divided surfaces

of the bones; the space, such as it is, is filled with a thin layer of imperfectly organized fibrine.

The cause of the non-union in this case must have been due entirely to the constitutional peculiarities of the patient.

Case III. The parts removed by amputation from a case in which resection of the knee had been performed ten months previously.

The parts in this case were removed by amputation by Mr. Paget, from a boy whose knee-joint he had resected ten months before. After the operation the bones united firmly, but the discharge remained profuse. On two occasions Mr. Paget attempted, by gouging out carious bone, to remove the source of irritation; and these operations proving unavailing, about ten days ago he amputated the limb.

The specimen shows a fine bony union between the tibia and femur and an abundant deposit of new bone on the back of the shaft of the femur. The epiphysial lines of cartilage appear to have been removed in the first operation; the cancellous tissue of the femur is yellow and unhealthy looking.

The real source of all the irritation during life is apparent in a large central necrosis of the cancellous tissue of the head of the tibia. In this bone is a detached sequestrum, about the size and shape of a pigeon's egg. A cloaca is seen leading down to this from the anterior surface of the tibia. Mr. Thomas Smith, *3rd March*, 1868.

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19. *Fatty tumour growing from the neck of the radius.*

This tumour had existed for six years, and was removed from the fore-arm of a boy, aged 9. It was extremely dense and immoveable before removal, and was attached firmly to the radius. It had increased continuously, and, lately, rapidly.

It was removed at the Children's Hospital by operation, and was found to originate from the radius, growing from the neck of that bone. The radius, after the removal of the tumour, was bare and rough, and beset with minute bony spicula.

The tumour was the size of a man's fist; it had a deep groove running through one side, where it had been connected with the bone. On the surface of the tumour, at the bottom of this groove, were particles of bone firmly attached to the growth.

A similar specimen of fatty tumour growing from the ramus of the

ischium is recorded in the seventeenth volume of the Society's *Transactions* (p. 286). It was exhibited by myself.

Mr. Thomas Smith, *17th March*, 1868.

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20. *Acute necrosis of the femur. Death from pyæmia.*

This specimen was removed from a girl aged 9, who was admitted under Mr. Smith's care into the Children's Hospital, on January 25th, 1868.

She had complained of pain in the thigh for one week, and during this time the swelling had formed and had been increasing daily.

On admission the left thigh was greatly enlarged, the swelling being greatest towards the upper part. The skin was tense, shining, and of a mottled whitish hue, brawny to the touch, and streaked over here and there with distended veins.

There was no sense of fluctuation, and the leg was not swollen.

The child was alarmingly ill; pulse 160, and very feeble; tongue dry; lips cracked; sordes on the teeth.

An incision was at once made, under chloroform, down to the femur on its anterior aspect, about the middle of the thigh. The bone was found to be bare and rough, apparently in its whole extent. No pus was let out, but a quantity of blood-stained serum escaped.

The child was put on sulphite of magnesia and quinine, with stimulants and nourishing food.

During the next day the swelling increased in the direction of the pelvis and round about the crests of the ilium. The following day the child died—nine days after the commencement of the attack.

On *post-mortem* examination, the left femur was found bathed in pus; the surrounding muscles were infiltrated and softened. The femur was necrosed and bare throughout its whole shaft, as far as the edges of the articular cartilages. There was no loosening of the epiphyses. The hip-joint was perfectly healthy; the knee-joint contained pus; the cartilages seemed natural.

The femoral vein contained a decolorized and partially adherent clot; it contained no purulent fluid; the inner coat of the vein was white, opaque, and thickened.

The femoral artery was healthy.

There were secondary abscesses in the lungs, in the substance of the heart, and in the pectoral muscles. The bronchial glands were

enlarged and intensely congested; one of them on section contained much dark blood.

There were no abscesses in the liver or spleen. One kidney contained a small abscess. Mr. Thomas Smith, 17*th March*, 1868.

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21. *Acute necrosis of the upper third of the right tibia, from a blow; followed by pyæmia and death on the fifth day after the injury.*

Arthur Ambrose, aged 10, a delicate-looking boy, was brought to the Westminster Hospital on the evening of Thursday, February 27th, 1868, suffering from a slight contusion of the upper part of the right leg, caused by a fall on the kerb, on the previous evening, when coming out of school. He complained also of a pain in the head, which had only come on after the accident, for previously he had always enjoyed good health. There was no wound, or even abrasion, of the skin of the leg or of the head. A ham-splint was applied. On the following evening, February 28th, at 7 P.M., he was again brought to the hospital and immediately admitted. He complained of pain in the head, but was perfectly conscious; pulse 120, full and bounding.

February 29th, 10 A.M. Has been delirious and screaming out all night; pulse 135; bowels confined.

1·30 P.M. Was first seen by Mr. Holthouse; was then screaming out and talking incoherently, but conversed rationally when spoken to. When asked why he screamed out, he could not tell. His face was pale; his manner was greatly excited, and there was extreme restlessness. The breathing was short and rapid; the pulse feeble, from 140 to 150. A mottled, red, hot, œdematous swelling occupied the upper third or fourth of the right leg; it pitted on pressure and was painful, but no fluctuation could be detected. In the evidently hopeless condition of the patient Mr. Holthouse declined using the knife.

The knee-joint was not implicated. A linseed-meal poultice was ordered to the injured part, and as the patient complained of thirst, H. efferv., ℥j., cum Spt. ammon. comp. ʒss., was prescribed every three hours.

9 P.M. Pulse 180, small and fluttering. Bread and milk every hour, if it can be taken and the patient should be awake.

March 1st. He continued in the same state, but weaker, the whole of this day, and died just before midnight, no pulse having been perceptible at the wrists after eleven o'clock in the forenoon.

Post-mortem appearances of the body at 4 P.M. *on March 3rd.*—The body was that of a delicate boy, and presented nothing remarkable externally, except at the seat of the injury, where the skin was of a claret-colour and all the soft parts œdematous; but nothing like fluctuation could be discovered. On making an incision, the soft parts were found infiltrated with serum; but there was no pus.

On cutting down to the tibia, the periosteum was seen to be completely detached from its upper third or fourth in its whole circumference, and a small quantity of thick chocolate-coloured grumous fluid, looking like stained pus, existed between the bone and its investment, but it was too small in quantity to have flowed out had an incision been made down to it during life. The knee-joint and all the other joints were healthy.

On opening the thorax, both pleuræ were found coated with recent lymph in patches, and the parietal was adherent to the visceral layer.

Both lungs were studded throughout with purulent collections, and with small apoplexies from the size of a pea to that of a walnut.

The parietal and visceral layers of the pericardium were covered with plastic granular lymph. A stratum of this lowly organized lymph, of a consistence like paste, was interposed between it and the sternum.

The heart itself was normal and firmly contracted on a clot in the left ventricle.

The bones of the skull were very thin, and none of the sutures obliterated; the brain and its membranes presented nothing particular, except that a small clot, about the size of a pea, was to be seen on the edge of the left corpus striatum.

The liver was healthy and presented no trace of suppurative action.

Mr. C. HOLTHOUSE, 21*st April*, 1868.

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22. *Fracture of the femur, with injury of the arteries.*

The man from whom these preparations were taken was admitted into the Middlesex Hospital under Mr. De Morgan's care on December 31st, 1867. He was a chimney-sweep, aged 39, of intemperate habits; and he had been thrown from a ladder by the fall of a chimney, the bricks striking him on the leg and thigh as he sprang aside. When brought in, there was much bruising of the thigh with transverse fracture of the left femur three inches above the knee. No coldness, pain, or numbness was complained of in the leg or foot.

The limb was arranged on a long splint and elastic extension applied. Beyond complaining much of pain in the ankle at first, nothing further seemed wrong until a fortnight later, when on readjusting the splint (the patient again complaining much of pain in leg), the foot was seen to be bluish and cold, and no pulsation could be felt in either tibial artery. All apparatus was removed, the leg kept between sand-bags, and warmth applied. Definite sloughs, however, soon formed; and in three or four weeks' time nearly the whole of the leg, from midway between the knee and the foot downwards, was black – a dry slough – a part to the inner side of leg and outer part of foot alone remaining free. On March 18th an abscess was found to exist deep in the leg where the surface was sound; amputation was performed, the limb being removed through the knee-joint. It was the opinion of Mr. De Morgan and of some of the other surgeons that the main artery had been probably injured at the site of fracture; but the popliteal artery was seen to pulsate at the time of the operation by the house-surgeon. After the operation the man never seemed fairly to rally; the wound remained inactive, sweatings and exhaustion, but no rigors, set in, and he died after seven days.

Examination of the body showed no distinct pyæmic deposits – the early stage of double lobular pneumonia only, and the following condition of the lower extremity.

In the removed leg extensive suppuration had destroyed most of the soft tissues completely round the bones, the tibia being largely denuded of periosteum. The fleshy belly of the tibialis anticus had been torn across. The anterior tibial artery was lost in the surrounding suppuration close to its commencement. The posterior vessel had been torn across two inches from the ankle, the torn end of the upper portion being contracted and closed by a clot reaching up to the nearest branch. The torn extremity of the lower part was missed in the dissection, but the vessel at the ankle was patent, empty, and quite of normal appearance. The femur was found to have been broken across nearly transversely about three inches above the lower articulating surface, the fragments overlapping for two or three inches, the lower fragment being drawn up behind and to the inner side of the upper, and much irregular callus being thrown out about the broken ends, keeping them firmly fixed.

The main artery was found bent out of position by the broken bone, and was with difficulty dissected out from the surrounding callus. On slitting open the vessel, the tied end was found occluded by a soft black clot reaching to the nearest branch, and, three inches higher

up, the internal and middle coats were torn across, contracted, and separated for about half an inch, the upper end being filled with a firm, decolorized, and partly adherent clot reaching to the next branch.

The chief point of interest in this case seems to be the fact of such extensive vascular lesions being present with hardly any symptom leading one to suspect them—no bruising of the calf, no pain there, no pulsating swelling, and no numbness or notable coldness of foot, at least during the first ten days. The explanation of the absence of such symptoms seems to be a singular freedom of collateral circulation, together with the special form of the lesions. Thus the femoral artery in Hunter's canal seems to have been pressed upon by a sharp edge of bone, which had produced exactly the same effects as an ordinary ligature, but blood found its way into the part below—at least for some while before the amputation. Then the posterior tibial, being roughly torn across by the blow which ruptured the tibial muscle, was naturally closed, as when a limb is torn asunder by machinery, and this closure was doubtless aided by the coincident injury to the vessel above. Blood seems, however, to have been supplied to the lower end in this case again, as the vessel at the ankle was of healthy appearance at the time of death.

The fate of the anterior tibial artery is uncertain. It could not be traced through the great abscess which surrounded the bones, but it may have escaped injury at the time of the accident and have been subsequently destroyed in the suppuration set up.

The practical hint to be gleaned from such a case is clearly that, in cases of fractured bone in the close vicinity of large vessels, we must not be content with the absence of the usual symptoms of arterial lesion, but must be careful to ascertain that there is still good vascular supply to the limb below, before deciding upon the mode of treatment.

This preparation is now in the museum of the Middlesex Hospital.

Mr. Henry Arnott, *5th May*, 1868.

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23. *Aneurysmal tumour connected with the lower end of the tibia.*

In March, 1866, Master J. J., then aged 11, received a blow from a cricket-ball, somewhere over the lower third of the right tibia. The limb, at the part struck, was swollen and painful for a few days, and the boy was rendered lame for a little. The pain and lameness, however,

gradually wore away. In August of the same year, being in the Highlands with his parents, he had a great deal of walking about and over-exerted the weak leg, and, about a month afterwards, he received an accidental kick from a playmate, almost exactly on the place where he had been struck with the cricket-ball, six months before. After this the limb became slightly swollen permanently, he suffered from occasional fleeting pains in it, and was slightly lame, but he could walk about quite easily. His general health was excellent, and he slept and ate well.

In November of the same year he was brought to Mr. Bickersteth. On examining the leg, there was an evident enlargement over the lower end of the tibia, from one and a half inch above the ankle upwards for three inches. This swelling was well-defined and limited to the region of the bone; it was perfectly smooth and flat, and firm to the touch. It was not painful on pressure. The skin was not adherent to it, nor discoloured. The superjacent cutaneous veins were not dilated. It was supposed to be of the nature of a chronic thickening of the periosteum, having all the characters of such, and in this opinion Messrs. Syme and Paget, who were also consulted, coincided. The patient was ordered iodide of potassium internally, and the limb was kept perfectly at rest and compressed by strapping over belladonna ointment.

For several months the tumour remained *in statu quo*. During the spring of 1867 the patient went to the country, the compression being still kept up, and in summer and autumn he was again away. He went about upon crutches, never putting the foot to the ground. On his return to Liverpool in September, the swelling had decidedly increased, more particularly behind on the inner and posterior side of the tibia, where it felt semi-elastic and gave the impression of impending suppuration. In November, for the first time, there was felt over the more elastic, resilient part of the swelling a sensation of crackling, and now also the youth began to complain of pain during the examination.

At this time the opinions of various surgeons were again taken. Mr. Syme thought there was an abscess of the tibia and recommended trephining, but also suggested the probability of the tumour being malignant and recommended that, if this were discovered by the incision necessary for the trephining, the limb should be removed. Messrs. Paget and Erichsen thought the tumour malignant and advised amputation. Sir William Fergusson suggested the proba-

bility of aneurysm of bone, and thought that tying the posterior tibial artery might be tried before resorting to severer measures. All, however, were agreed in the propriety of making an exploratory incision, to be followed by amputation if necessary.

In the beginning of December the patient came back to Liverpool, after seeing the gentlemen above named, when the tumour was found certainly to have enlarged. It still felt firm, but was slightly compressible, yielding to deep pressure, and giving a spongy feel to the finger, with an occasional sensation of crackling. The skin was free and sound. No bruit was audible with the stethoscope. The youth was a great overgrown lad—indeed immensely too big for his age, and very fat and flabby, though apparently in excellent health. His fat, flabby state all along threw great difficulty in the way of accurately making out the nature of the tumour.

On December 7th, the patient being under chloroform and a tourniquet over the femoral, a large incision was made into the tumour, from which torrents of blood immediately flowed, hardly diminished by tightening up the tourniquet to its full extent. The finger being plunged into the wound, the substance of the tumour was found to be soft and friable, easily broken down, and of a loculated character, having in fact all the feel of an encephaloid tumour of the bone, with fine septa running through it; these, indeed, gave the section, as seen at a glance after firm sponging, somewhat the look of the *septum pectiniforme* between the corpora cavernosa of the penis. Messrs. Long and Hakes having agreed with Mr. Bickersteth that the tumour had a highly malignant appearance, the leg was at once removed just above the knee-joint by Carden's method. The lad made a most excellent recovery with a perfect stump.

On making a dissection of the leg after removal, it was found that the disease consisted essentially of an expansion of the lower part of the tibia, having a large growth projecting backwards from it, both being of a vascular or aneurysmal nature.

Looking at the tibia in front, it is seen to be expanded in a smooth uniform manner throughout its lower third, swelling gradually out from above downwards. Pressing firmly on it, it is felt that only a mere shell of bone remains, which bends in and crackles under the finger. Turning the limb round, a large oval tumour, about five inches long by three broad, is seen springing from the posterior and outer side of the expanded tibia and running upwards from the lower end of that bone in the interosseous space between it and the fibula.

It overlaps the fibula at its lower end, but is in no way connected with it. It is of a dark colour, quite soft and compressible, and the soft structures were readily dissected from off it. It has a distinct wall of its own, which is in some places strengthened by the incorporation of fibres of the posterior leg-muscles. The whole mass is divided into two principal parts by the tendons of the tibialis posticus and flexor longus digitorum, which run in a groove or channel in the tumour through nearly its whole length from above downwards. One part—the internal—is that which lies fairly against the back of the tibia, and in it is the exploratory incision made at the time of operation. On separating its edges, we look down into a large cavity, of irregular shape, hollowed out of the base of the expanded tibia. Where the cut goes through the soft tumour, it shows this to be a sac filled with innumerable fibrous bands or trabeculæ crossing in every direction. The reticulated spaces are filled with clotted blood, proving the tumour to have been aneurysmal in its nature. The fibrous bands are mostly derived from the periosteum of the tibia, and so also are the walls of the tumour. The other, or outer, part of the tumour lies more over the intermuscular space and the fibula. It has the appearance of consisting of two sacs, the upper one having sprung out of the lower. On laying open the upper one, it is found to be filled with blood-clot, but it is not possessed of so much of the trabecular fibrous material as the inner part of the tumour, and has moreover a smooth wall. All the parts of the tumour communicate with each other. Over the outer part ran the posterior tibial artery and nerves. It seemed as if the disease had originally commenced by a hollowing out of the tibia, which had expanded so that in front only a mere shell of bone remained, while, behind, it had entirely given way. The periosteum had first been thickened, and then pushed out before the fluid (blood), which filled the end of the tibia, so as to form the walls and trabeculæ of the tumour, in its early stages, at least. Being unable to push aside the powerful tendons of the tibialis posticus and flexor longus, it had swollen out around them and met on their other side, so that they seemed to play in a channel in the tumour. The vessels and nerves, however, had yielded before it and were seen stretched over the outer part of the tumour.

Mr. E. R. Bickersteth, 19*th May*, 1868.

Report on Mr. Bickersteth's specimen of "aneurysmal tumour connected with the lower end of the tibia."—We entirely agree with the author in

his description of this specimen, and look upon it as an admirable example of aneurysm commencing in the lower extremity of the tibia, expanding the bone, and extending backwards into the muscles and soft parts behind the tibia.

Mr. William Adams,
Mr. Thomas Bryant, *2nd June*, 1868.

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24. *Osteoid disease of the ankle-joint* ("*chronic rheumatic arthritis*").

Patrick Murther, farm-labourer, aged 37, married, was admitted into the Liverpool Royal Infirmary, under Mr. Bickersteth, on January 15th, 1868.

On the 3rd of July, 1867, having been previously in perfect health, he suddenly felt a stinging pain in the right ankle, which became so severe that he had to give up his work as a labourer and lie in bed for a week, using camomile-fomentations to allay the pain and the swelling, which soon came on. He then tried his work, but, at the end of three days, had to give it up, and has never worked since. He has not been confined to bed, however, but has all along been able to walk with the aid of a stick, putting the affected foot to the ground. This used to swell a little if he walked too much. The pain was most severe during the first week, and again on three or four occasions afterwards; otherwise he did not suffer much. Now and then it woke him up at nights, and it seemed to be worst in cold weather. About two months before his admission, the swelling, which had been previously worst over the outer ankle, extended also to the inner side, and, about the same time, he became conscious that his "ankle-bones rattled about." The pain confined itself to the ankle and foot, and never ran up the leg. He noticed a very small lump in his groin shortly before admission, but it went away.

He had one blister applied over the ankle, and used first the hot and then the cold douche, but without any effect.

He never had a rheumatic pain, or, indeed, a pain of any sort in his life, and there is no history whatever of rheumatism or cancer connected with his near relatives, who seem to have been all remarkably healthy people.

On admission, the patient had the appearance of perfect health, having a ruddy complexion, and no appearance of being "pulled down" by his complaint. His right ankle was swollen to at least three or four

times its natural size, and the foot and lower part of the leg were thickened and had a brawny feel from matting together of the parts.

On manipulating the ankle there was no feeling of contained fluid imparted to the hand, but all the soft parts seemed thickened; the lower ends of the leg-bones were obviously enlarged, and several masses of bony hardness were to be detected around the joint. One very large one was situated beneath the outer malleolus. On fixing the leg and moving the foot, the bones of the ankle-joint could be felt grating against each other; and the foot itself could be twisted and turned almost in any direction, showing that the ligaments were either destroyed, or had become greatly stretched and elongated. The examinations gave the patient very little pain indeed.

A gland in the groin was found to be slightly enlarged; but this disappeared after the patient had rested for a few days in bed in hospital.

As the disease was deemed incurable, the patient's leg was removed below the knee, on February 4th, 1868.

After removal the subcutaneous tissues were found greatly infiltrated and matted together for some distance up the leg and downwards on the foot, and the muscles and tendons were in a similar condition.

Both the tibia and fibula, at their lower ends, were found to be very greatly enlarged, in a tolerably uniform manner; and, on making a longitudinal section of the former, the normal cancellated tissue had been replaced by dense compact bone. The astragalus was much altered in shape, especially on its articular surface, where, instead of presenting a prominent saddle-shaped surface for the bones of the leg to glide upon, it was flattened out and square, as if it had been ground down. The calcaneum was much expanded upon its outer side, and in this enlarged portion was a cavity into which the expanded outer malleolus fitted, and in which it played. The bones forming the ankle-joint were therefore all much enlarged and altered in shape.

The capsule and ligaments of the joint presented a most extraordinary appearance. Those parts which were still fibrous were immensely thickened, and the rest was occupied with large isolated masses of a semi-osseous, semi-cartilaginous material, of very various shapes, which gave a knobbed, irregular outline to the joint. It was these which had been felt before the removal of the limb as hard, slightly moveable bodies, rolling under the finger. A large osseo-cartilaginous piece, about an inch in diameter, occupied the position of what had been the external lateral ligament; another elongated

piece, looking somewhat like a distorted hyoid bone, lay along the front of the capsule, and two considerable pieces were at the back, while smaller ones were scattered up and down.

On cutting open the joint, it appeared to be in a state of complete disorganization; but not a drop of pus escaped – nothing but pure synovia. The most prominent feature was the articular surface of the astragalus, which was perfectly denuded of cartilage, and no longer had its proper shape, but, as above mentioned, it was almost flat, and looked as if it had been ground down. To the outer side of this was the expanded part of the calcaneum, with the cavity in it into which the lower end of the fibula fitted; and this was occupied by a bedding of soft, pulpy, vascular tissue, much resembling at first sight that which occupies the bottom of the acetabulum. Turning to the articular surface of the tibia, the cartilage was seen to be quite disorganized, softened, rough, and uneven, having a nodulated appearance, and in parts eaten away. From one part depended a mass of soft, vascular, fringe-like material. The lower bulbous end of the fibula was quite denuded of cartilage, and attached to its outer edge was a mass of a semi-cartilaginous consistence, irregular in shape, and with numerous little pendent bodies attached to it. The inner surface of the capsule of the joint was covered in most parts with similar small pedunculated bodies, giving it when fresh the appearance of a piece of hydatiginous chorion. The bodies were exactly such as might have formed the so-called "loose cartilages," had their pedicles given way.

The posterior tibial and peroneal arteries for some distance above the ankle were very much calcified.

On making a microscopic examination of the cartilaginous and osseous tumours, the former were found to contain well-marked cartilage-cells; in some sections the appearance was that of almost pure hyaline cartilage, while in others the structure was completely fibrous. The bone was almost identical in structure with normal dense cancellated tissue, and contained perfectly developed bone-cells, arranged for the most part circularly round cavities which resembled large Haversian canals on section.

Report on Mr. Bickersteth's specimen of "osteoid disease of the ankle-joint."—We have carefully examined the specimen handed to us for examination, and compared it with Mr. Bickersteth's description of the same. We agree with the author entirely in his description in every point, noticing particularly that the astragalus appears to have

been pressed and displaced inwards to a greater extent than described, as in a severe example of flat foot. The astragalus, moreover, is worn down so that one-third of its thickness has disappeared, its upper articular facet having lost its ordinary features and become completely misshapen. The appearance of enlargement and expansion of the outer side of the os calcis, described by the author, is evidently due to the superaddition of nodulated masses of new bone developed in the fibrous capsule and ligaments of the joint.

The anterior border of the articular surface of the tibia is completely bevelled off upwards and forwards, rendering the surface of the facet oblique from behind forwards.

From all these points we have no doubt as to the specimen being a good example of the so-called chronic rheumatic arthritis, being specially remarkable from the early age at which it occurred.

Mr. William Adams,
Mr. Thomas Bryant, *2nd January*, 1868.

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25. *Rare form of secondary cancer of pelvic bones concurring with scirrhus of breast.*

The patient from whose body these preparations were taken was a woman, aged 60, who was for eighteen months in the Middlesex Hospital, under Mr. Moore's care, with an ulcerated scirrhous breast, which had not been operated upon and which had been present for eight and a-half years. She died on May 7th, 1868, having complained much during the last two years of her life of pains about the pelvis, back, and thighs. Once, during this period, a slough formed over the left metatarsus, with general numbness of the foot. Later on, hyperæsthesia of the same thigh was noted, and for three months before death the lower extremities seemed completely paralysed, increasing deformity of the lower part of the back having been observed for some months previously.

Post mortem examination.—Body greatly emaciated and distorted, the lower part of the spine being twisted with the pelvis to the right side. Legs and right arm very œdematous. Large soft swelling, the size of a hen's egg, in left groin; a yet larger and ulcerated one in right groin—both made up of breaking-down cheesy cancer. In the site of the right breast is a deep and wide ulcer, the edges of which are thickened and infiltrated with hard cancer. Small nodules of similar

deposit stud the surrounding skin, and the soft parts leading up to the axilla cut crisp with cancer. The morbid changes have not penetrated the chest. The viscera generally are not specially affected in any way, except that the kidneys are contracted and somewhat granular, and also that in the centre of the right supra-renal capsule is a nodule, the size of a hazel nut, of grey, semi-translucent, firm material (like that of Addison's disease), not affecting the cortex.

The lower part of the spine, beginning with the first lumbar vertebra, is twisted abruptly over to the left, a second equally sharp twist towards the opposite side commencing with the fourth lumbar vertebra, whilst the sacrum being itself strongly curved brings the coccyx nearly under the dorsal spine again—about an inch to the right of the middle line. Owing to this twisting of the sacrum and lumbar spine, a line directed straight backwards from the symphysis pubis would fall on the right side of the sacrum close to its articulating surface. Passing to the special changes in the bones, one finds that the pubes is the only part of the pelvis free from deformity. The ischium is much altered, thus :

On the right side there is a soft globular enlargement, the size of half an orange, on the internal surface, corresponding to the acetabulum, whilst externally, behind and below that cavity, is a pear-shaped eminence, of the consistence of cheese, four inches in length, reducing the size of the great notch to one and a-half inch by half an inch. The ischial tuberosity also is more than an inch thick. It is worthy of remark, that the action of the increasing deformities has partially dislocated, so to say, the acetabulum into its three primitive portions, as is detected on firmly grasping and moving the part. On the left side the changes in the ischium are limited to an ill-defined swelling internal to the acetabulum, less than on the opposite side, but sufficient—with the bulging of the sacrum in this direction—almost completely to block up the greater notch.

The ilium on the right side is swollen behind, so as to be nearly three inches thick at its junction with the sacrum, whilst on the opposite side, besides two or three soft nodules the size of walnuts above the acetabulum, a large soft globular swelling with a broad base, four inches in diameter, projects over the left third of the sacrum.

Passing to this latter bone, one finds it irregularly swollen and softened throughout, causing the deformity already described, and presenting also behind three or four soft globular swellings, the size of walnuts, on the left side of the sacral spine.

The two lower lumbar vertebræ are very singularly affected, all the bony processes being converted into soft bulky projections, bearing but little resemblance to the original prominences, whilst the bodies, softened and swollen, have been pressed together and pushed aside by the weight of the spine above. The head of the right femur, although apparently not in the least changed in form or size, is so soft as to be readily cut with a knife, the softening extending about an inch below the trochanters.

As the minute appearances of these growths will be probably reported at length by the Committee to which the specimen was referred, it will suffice to mention here that the cut section of the various growths—including the softened head of the femur—presented an appearance much like fine cancellous bone-tissue softened by soaking in mineral acid, and yielding a scanty milky juice on being scraped. Under the microscope but little remaining true bone-structure could be seen, but the form of the Haversian spaces was preserved for the most part by a fibrous stroma, in which the lacunæ were replaced by oval and spindle-shaped nuclei, the spaces being more or less closely filled with variously-shaped and sized cells, having mostly a large round or oval nucleus.

The specimen, which is, I believe, one of very rare and special interest, is now in the museum of the Middlesex Hospital.

Mr. Henry Arnott, 19*th May*, 1868.

Report by the Committee on Morbid Growths on Mr. Arnott's case of "cancer of the pelvis."—The specimen consists of the pelvis, with a small portion of the spinal column attached, and sections of the head and neck of the right femur, these parts being the seat of a morbid growth. The general appearance of the tumour, its relations to the various structures affected, and the changes of external form and of consistence which have taken place in the diseased bone itself, having been sufficiently described by Mr. Arnott, it is only necessary for the Committee to refer to the microscopic characters of the growth.

In the milky juice, which is readily expressed from the tumour, there are numerous round, oval, caudate, or, more rarely, fusiform cells, which contain, for the most part, one, or at most, two nuclei. They measure from $\frac{1}{2000}$ to $\frac{1}{450}$ inch in diameter, the majority being from $\frac{1}{1300}$ to $\frac{1}{800}$ inch. The largest cells are oval, and contain very distinct brood-spaces, with an endogenous cell-formation. On section, the

Haversian canals are found to be greatly enlarged, and to contain, in many cases, groups of cells and nuclei, lying in close contact with one another, and without any intercellular substance.

In some parts, the bone-tissue surrounding the Haversian canals is deprived of its calcareous matter, so that the lacunæ can be scarcely distinguished, while in others the Haversian lamellæ seem to have undergone no material alteration either of form or arrangement. In the former case, little heaps of cancer-cells and nuclei are seen, which, from their form and arrangement, seem to us to be contained in dilated lacunæ. In the cancellous tissue of the head of the femur, very little fat and no trace of medullary cells are to be found.

The disease is too far advanced to enable us to express an opinion as to the question whether the growth originated from the periosteum or from the medulla. From the appearances observed in the head of the femur, we think it extremely improbable that the morbid process began in the periosteum.

As to its nature, the Committee can have no hesitation in regarding it as cancer. 31*st May*, 1868.

VII. DISEASES, &c., OF THE ORGANS OF SPECIAL SENSE.

A.—EYE.

1. *Tubercle of the choroid diagnosed by the ophthalmoscope during life.*

M. J. P., a little girl, aged 8, was admitted on November 5th, 1867, into King's College Hospital under the care of Dr. Garrod, with symptoms of acute tuberculosis. She had become rapidly emaciated during the last month, and had during this time suffered from dyspnœa and dry cough. On admission there was great febrile disturbance, pulse 132, respiration 66, temperature 101°. Slight dulness of the left side of the chest, and crepitation about the second intercostal space. November 6th, temperature 106°, pulse 148, respiration 96. Urine acid; no albumen. Puerile respiration on right side, slightly tubular on left. The eyes were examined by Mr. Soelberg Wells with the ophthalmoscope, and tubercles in the choroid were diagnosed. On November 11th, the patient grew rapidly worse and died.

Post-mortem examination by Dr. Kelly.

The brain-substance was apparently normal; but on the superior

aspect of the left hemisphere were seen two or three small opacities in the pia mater. Both lungs were filled with miliary tubercles. Liver and heart healthy; kidneys contained tubercles in their cortical substance and were throughout congested. Capsule of spleen had some tubercular (?) deposits, the organ itself being healthy. The mesenteric glands were somewhat increased in size, and some of the solitary glands of the small intestines were enlarged. The surface of the peritoneum was healthy.

Examination of the eyes during life.—Mr. Soelberg Wells found that the eyes appeared externally quite normal. The sight was perfect (number one of Jæger was read with each eye). The field of vision was normal; the refracting media were perfectly transparent. With the ophthalmoscope it was found that the optic nerve and retina were healthy, the retinal veins slightly dilated, and the outline of the disc perfect. In the choroid—which was otherwise perfectly normal—were noticed numerous small, circular, prominent greyish-white nodules, which were chiefly situated in the vicinity of the optic disc, more especially in the region of the yellow spot. Towards the periphery of the fundus they were more sparsely scattered. The epithelium of the choroid around the nodules was only very slightly altered in appearance, the cells being evidently opened up or pushed aside by the nodules, and there was no agglomeration of pigment around the latter, but the thinned portion of the epithelium passed insensibly over into the normal condition. At some points a nodule could be seen lying beneath a retinal vessel which passed distinctly over it. The nodules were prominent, but whether or not the retinal vessel was arched forward by the tubercle could not be accurately determined, as it was quite impossible to distinguish with certainty as to the presence of a parallax, on account of the restless movements of the patient's eyes. The condition was very similar in both eyes.

Mr. Bowater Vernon, Curator of the Museum of the Royal London Ophthalmic Hospital, Moorfields, made a *post-mortem* examination of the eyes, of which he has favoured me with the following report.

Examination of the eyes.—After death the eyes had been preserved for two days in glycerine and water, and were soft and flaccid.

On cutting them open, the vitreous humour escaped like water, the retina was softened and detached, and the layer of pigment-epithelium lining the choroid had been loosened and carried off with the vitreous humour.

Both eyes were placed in a weak solution of chromic acid. The

right eye has not been any further touched; the left has been examined minutely. The anterior portions of each showed nothing to note, and have not been preserved. Both eyes presented similar appearances when examined with the naked eye, or still better, with a pocket-lens. The inner surface of the choroid was studded with a number of pearly-white spots; twenty or thirty could be counted in each eye, situated around the entrance of the optic nerve, more numerous on its outer than on its inner side, and much more thickly scattered over other portions of the fundus; the largest were of the size of a millet-seed, the smallest no bigger than a pin's point; their surfaces were smooth, and though some of the largest of them appeared to be elevated, they could not be detached. Their outlines were distinct, except where one or two of the smaller ones seemed to have become blended together.

When the choroid was separated from the sclerotic, the spots could not be seen through the thickness of the choroid. When examined *in situ* with low microscopic powers, it was not possible to trace their connection with any of the larger choroidal vessels. When higher powers were used—the one generally employed was one-eighth of an inch—the following appearances were noticed:—Many sections were made through the patches and the surrounding choroid. In all, the layer of pigment-epithelium was almost entirely absent, but in all the elastic lamina of the choroid was perfect and quite normal. Internally to this there were large numbers of colourless cells of uniform size, closely packed together, each containing one or more nuclei, and, except that they were smaller, not to be distinguished from the corpuscles of pus or lymph.

Where the section had been made through the largest patches, it was evident that the apex of the mass of cells was appreciably elevated above the level of the surrounding tissues, and that the prominence was due to the cells being amassed between the elastic lamina and the chorio-capillary tissue.

The outer layer of these cells blended gradually with the stroma of the choroid, and cells of a like character and appearance were scattered thickly amongst the dark pigment-cells of this coat.

At this spot, however, the cells were not so uniform in size; here and there were larger cells full of nuclei, and the cell-walls could not be so easily distinguished.

Mr. Soelberg Wells, 17*th December*, 1867.

2. *Cystic disease of the retina in an eye lost from an injury fifteen years previously. Glaucomatous symptoms, with sympathetic irritation of the other eye.*

George F——, aged 52, received a penetrating wound of his right eye, fifteen years ago, from running against a bar of iron. He then attended for some weeks as an out-patient at the Moorfields Hospital. At that time he had only perception of light, and in the next eighteen months the eye became totally blind. Since that date—for fourteen years—he has done his work as a dock-foreman with his left eye, when, in November, 1867, he was obliged partially to discontinue his duties, on account of his failing sight and severe headaches.

He came under my care at the Moorfields Ophthalmic Hospital, in November, 1867, and continued under treatment until the January following. He had great pain in the lost eye, which was at times red and irritable; its tension was decidedly increased. He complained at times of the sound eye being affected by the irritable state of the lost one. Under these circumstances I removed the eye.

Examination of the eye after removal.—A section was made through the optic nerve and eyeball.

The lens was opaque, and its anterior and superficial layers white and chalky.

The vitreous humour was very tenacious, discoloured, and much more firmly adherent than usual to the coats of the eye.

The optic entrance was depressed, presenting the appearance of glaucomatous cupping.

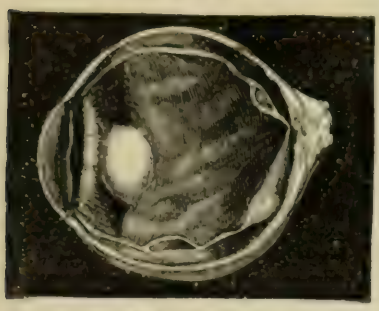
The choroid was apparently normal.

The retina was very slightly detached from the choroid. Its outer aspect was studded with small cysts of various sizes, the largest about that of a small pea. They were eleven in number, and they each appeared to bulge out from the choroidal aspect of the retina, and to be formed by the separated layers of that structure. Several of the cysts were opened in the section through the eye; their contents could not be ascertained, but the cysts themselves have been carefully examined by Mr. Vernon, the curator at the hospital.

Report of examination of the retinal cysts.—The cysts appeared to have been formed at the expense of the outer layers of the retina. Their walls consisted of a very fine tissue of delicate fibres, which contained many nuclei of their own, and which were closely interlaced with

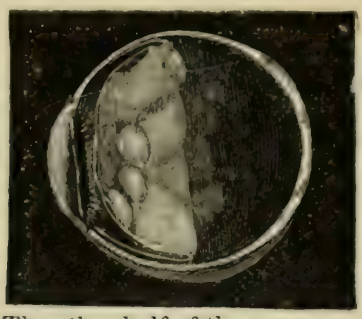
small nucleated cells, intermingled with round highly refracting bodies, the remnants of the granular layers of the retina. To the outer walls of the cysts which were examined some of the choroidal epithelium was adherent, while their inner surfaces were lined with squamous epithelium. Many of the cells in the cyst-walls contained fatty granules. With acetic acid the fibres forming the cyst-walls appeared to consist of connective tissue without any elastic element.

Fig. 22.



One half of the eye showing the chalky lens with the cysts and the retina *in situ*.

Fig. 23.



The other half of the same eye, with the posterior half of the retina turned forwards, to show the position of the cysts on its choroidal surface.

The vitreous humour was very tenacious, and, under a high power of the microscope, contained webs of fibres and very many varieties of cell-forms, *e. g.*, very large cells closely resembling squamous epithelium from the mouth, each containing a well-marked nucleus.

There were also some large nucleated cells with very long processes, and spindle-shaped cells of different sizes. Many irregular masses of pigment were likewise seen with fatty globules collected together, and here and there some crystals of margarine.

Remarks.—The structure of these cysts seem to correspond closely with the cysts in the iris described by Hulke and others.

Mention has been made of cysts of the retina similar to those now described by M. Iwanoff, in a paper on "The different forms of inflammation of the retina," read before the Ophthalmological Congress at Heidelberg in September, 1864, and in which he alludes to three specimens, containing respectively one, five, and seven cysts. They all occurred in detached retinæ, and, according to M. Iwanoff, they were due to inflammatory changes in the outer layers of the retina, by which the connective tissue and Müller's fibres were much increased,

and so formed interspaces in which cells in process of disintegration and fatty degeneration might be collected and retained.

Mr. George Lawson, *3rd March*, 1868.

B. - EAR.

3. *Disease of the tympanum in a tuberculous child aged 9 months.*

The child died of general tuberculosis. The right tympanum contained several semi-solid white masses, which could be clearly distinguished through the membrana tympani. A similar matter filled the mastoid cells. The left ear was healthy. The specimen was brought forward as illustrating the early age at which the foundation of strumous disease of the tympanum, involving the mastoid process, may be laid.

Mr. James Hinton, *19th May*, 1868.

VIII. TUMOURS.

1. *Scirrhus of the hand.*

A man, aged 35, came under my care in 1863 with an indurated ulcer in the palm of the hand, immediately over the head of the metacarpal bone of the ring-finger. This had existed some months, beginning in a hard mass, which had gradually ulcerated. I removed the ring-finger, together with the disease, and the parts healed soundly.

In 1865 he again applied with an ulceration of the same character as before in the old cicatrix, and involving the middle finger. This was excessively painful, and he was anxious to lose the hand. I succeeded, however, in apparently removing the whole of the disease by amputating the middle finger and parts of the fourth and fifth metacarpal bones. The appearance of the hand after this operation was shown in a cast.

About a year after the last operation, induration and ulceration appeared in the cicatrix, and gradually deepened and spread. The margins of the ulcer were exceedingly hard, and the pain and inconvenience were so great that the man at last determined to have the hand removed. Owing to inflammation of the wrist, which supervened

upon the second operation, and consequent anchylosis, I thought it best to amputate in the fore-arm; this I did, close above the articulation.

The ulcer presented every appearance of being of a scirrhous nature, and Mr. Bruce's examination confirmed this. There is no appearance of disease in any other part of the man's body, and the axillary glands are in no way affected.

Mr. Christopher Heath, *5th November*, 1867.

Microscopical examination by Mr. Bruce of Mr. Heath's specimen of tumour of the hand.—On carrying a section across the indurated and ulcerated skin, the surface was observed to be of a greyish-white colour, and to be marked by dense bands of fibrous tissue running through it. A sensation of grittiness was noticed on scraping the surface, and a small quantity of a milky fluid was expressed.

A thin section under the microscope presented the usual characters of indurated and thickened skin; but, in addition, large numbers of cells were found lying amongst the fibrous tissue composing the deeper layers of the cutis, some in densely-packed masses, some thinly scattered through the fibrous areolæ. In the superficial parts these cells may be seen to invade the papillæ from below. In the neighbourhood of the ulcerated spot, the epidermis and papillæ are natural and unaffected; but the surface of the ulcer presents only broken down and fattily-degenerated cells or nuclei crowded together, without any remnant of the original structure of the part.

The cells possess for the most part a distinct outline, a single large vesicular nucleus, with one or two nucleoli, and very granular contents. In form they are caudate, oval, or fusiform, and measure from $\frac{1}{1500}$ to $\frac{1}{2500}$ of an inch in diameter.

A section of the skin taken from a distant part of the hand presented no unusual characters.

Mr. A. Bruce, *5th November*, 1867.

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2. *Melanosis of the skin of the arm and of an axillary gland.*

A young woman of remarkably healthy appearance was sent to me in the spring of the present year by Dr. Grigor, R.N., of Deptford, with apparently a nævus on the back of the fore-arm, the skin being discoloured for about the size of a shilling. An operation by ligature had already been performed on it unsuccessfully; and, under these

circumstances, I thought it best to excise the piece of skin. Upon doing this, however, I found beneath the skin a nævoid-looking growth, about the size of an almond, lying upon the fascia. This was removed without difficulty or hæmorrhage; the wound healed, and the patient was discharged, well.

Mr. Bruce examined this vascular growth, and found, in addition to vascular tissue, some of the nested cells of epithelioma, and a few pigment-cells.

In October the patient applied to me again with two small and hard lumps close to the cicatrix of the former operation, and with an enlarged gland in the axilla. No disease was perceptible elsewhere, and the patient still looked the picture of health.

On the 23rd October I excised the original cicatrix, with the two small masses; and, to make quite sure, I removed also the deep fascia of the fore-arm to the same extent. I then removed the gland in the axilla, which proved larger than I anticipated, and was globular in form, of the size of a tennis-ball, and perfectly black. It was removed principally by enucleation with the fingers, and at the last moment its capsule tore, and gave exit to a small quantity of discoloured fluid.

The patient did well for a week, when she got pain in the side, pleurisy with rapid effusion came on, and she died on the tenth day.

At the *post-mortem* examination, the left pleura contained a quantity of flaky fluid; the lungs presented several nodules, which, when cut into, proved to be in part pure pyæmic abscesses, and in part deposits of melanotic matter. In the glands at the roots of the lungs there were also deposits of black material, which was proved microscopically to be melanoid. The wound was healthy, but the axillary vein was blocked in the lower part, and in the upper the lining membrane was inflamed and coated with pus.

The portions removed at the operations were brought before the Society. The two small masses removed with the cicatrix were soft cancer containing a small amount of pigment. The mass from the axilla presented an excellent example of melanotic cancer.

Mr. Christopher Heath, *5th November*, 1867.

Microscopical examination by Mr. Bruce of Mr. Heath's specimen of melanotic tumour from the arm.—I received from Mr. Heath in last spring a small tumour, which he had recently removed from the fore-arm of a woman. It was closely connected with, and probably originated in, the skin and subcutaneous cellular tissue.

The growth presents the characters of a glandular formation, and consists mainly of greatly hypertrophied sebaceous glands, with here and there concentric masses of epithelial cells, having the same character as the ordinary nests of epithelioma. Large numbers of epithelial cells are also found lying unenclosed within a limiting membrane, but apparently always in connection with a hair-follicle, and therefore probably having originated in some of the sebaceous glands of the part. Some of these cells, however, appear to contain large vesicular nuclei and nucleoli, and a few have spaces much resembling the "brood-spaces" or "brautraume," of Virchow; it would seem, therefore, that these cells have been formed under unusual circumstances, and have some abnormal characters. Besides these cells, however, there are masses of cells of a different character; they are rounded or oval, contain one or two nuclei and some pigment-granules, and vary in size from $\frac{1}{2000}$ to $\frac{1}{2500}$ inch in diameter. In some the nucleus may be seen to be undergoing division.

The tumour recurred, and after removal three small nodules, varying in size from that of a hempseed to that of a small bean, were found situated in the subcutaneous cellular tissue, and adherent to the deeper layers of the skin. These consist of densely-packed nucleated and nucleolated cells filling the meshes of a delicate fibrous network. The cells in many places contain much pigment; in form they are oval, rounded, or caudate, and measure from $\frac{1}{2000}$ to $\frac{1}{2500}$ inch in diameter. In most the nucleus is very distinct and prominent, and contains one, two, or three well-defined nucleoli.

The mass removed from the axilla was about as large as a small apple, and was distinctly encapsuled. On section it presented very well-marked characters of melanosis, the surface being of a deep purplish-black colour, marked here and there by lines and spots of a deep brown colour. Under the microscope it is found to consist of densely-packed cells, having the same characters as those above described; they are distributed amongst the meshes of the fibrous stroma of the gland, and can be seen in parts to be invading the normal gland-tissue. The pigment is more abundant in these cells than in those of either of the foregoing specimens.

At the *post-mortem* examination, several large masses of bronchial glands were found presenting the same microscopic characters as the above, and differing markedly from the ordinary pigmented glands so commonly found.

In both lungs were numerous pyæmic deposits, besides which, how-

ever, the lower lobe of the right lung contained a deeply pigmented and softened mass, which proved upon examination to be of the same nature as the growths in the other parts. The left lung also contained a considerable mass of melanotic growth in its substance near the root.

The chief interest in this case is the relation which appeared to exist between the glandular growth and the melanotic deposit in the original tumour. The former appeared to be by far the most important part of the disease, especially as it was accompanied by an extremely rapid formation of epithelial cells in the substance, and not on the surface, of the skin. It is possible, however, that the disorganization caused by the rapid increase in the gland-structures of the part may have led to rupture of the limiting membrane and escape of epithelial cells. The tendency, however, to the formation of nests, and the vesicular character of the spaces observed in some of these cells would point to some morbid process taking place in these elements.

The concurrence of glandular and cancerous growths in the skin was originally noticed by Scarpa, who considered that they invariably occurred together. Weber * also described a remarkable case of glandular tumour, concurring with a medullary cancer or fungus hæmatodes of the skin. Thiersch † seems inclined to consider that this was a case of epithelioma commencing in the sebaceous glands; but it is more probable that it was a similar case to that under consideration, in which cancerous elements were undoubtedly present and led to secondary deposits.

Mr. A. Bruce, *5th November*, 1867.

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3. *Tumour (apparently cretified) removed from beneath the skin of the back.*

The patient from whom the specimen was taken is a man aged 66, in good health, and following the occupation of a travelling stationer. He first observed the tumour about six years ago; it then looked like a cherry, being red and succulent.

For four years the growth increased very slowly, causing no pain, but becoming gradually harder. Two years ago a quack, to whom

* *Meckel's Archiv.*, 1827, p. 10 *et seq.*

† *Der Epithelialkrebs*, Leipzig, 1865, p. 18–19.

the patient applied for relief, rubbed some lotion on it, which had the effect of breaking the skin; he then "probed it with a piece of wire, and some stuff like white gravel came out." Since that time it has become very much harder and grown rapidly, causing no pain, but great discomfort from itching.

The patient was admitted into King's College Hospital, at the end of October, 1867, with a large and prominent tumour occupying the middle line of the back between the shoulders. It felt very hard, and was considered by many to be an ossifying growth.

Sir William Fergusson, on November 2nd, removed the tumour by a crucial incision; it was closely adherent to the superjacent skin, which required to be dissected off it with the knife.

Immediately after removal, it was found to weigh two pounds ten ounces. The deep surface was flattish and measured about seven inches by six in thickness; the most prominent part was four and a-half inches.

On section, the growth is seen to consist of a network of fibrous tissue, the roundish interspaces of which are entirely filled with a white earthy-looking substance, in consistence intermediate between chalk and cheese; roundish pellets of this can be readily turned out from their beds in the meshes of the fibrous tissue.

Under the microscope, the earthy-looking material is shown to be made up of semi-crystalline granules (cells?) of irregular form, but pretty uniform size (about $\frac{1}{1000}$ inch). The fibrous network has the usual appearance of white fibrous tissue.

A chemical examination of the earthy-looking substance, after being thoroughly dried by exposure for some hours to a temperature of 212° F., gives the following result:—

Combustible organic manner . . .			97·3
Phosphate of lime .	2·21	Earthy salts	2·7
Carbonate . . .	·49		
and a minute trace of magnesia.			
			100·0

I am indebted to Dr. E. A. Cook, Demonstrator of Chemistry at King's College, London, for this analysis.

Thus the earthy salts are seen to be in much smaller quantity than the appearance of the substance led one to expect.

Dr. Trimen, 19*th November*, 1867.

Report by the Committee on Morbid Growths on Dr. Trimen's "cretified tumour removed from the back." The portion of the tumour submitted for examination is enclosed in an ill-defined capsule of dense connective tissue, from which fibrous bands pass into the substance of the mass, subdividing it into lobes and forming a reticulum with wide meshes, which are occupied by the white cheesy substance forming the basis of the tumour. This fibrous reticulum is most abundant in the parts nearest the surface. A thin section of the tumour, examined by transmitted light with the naked eye, presents marked differences in the opacity of different parts, the white cheesy masses being subdivided into smaller ones, none exceeding a line in diameter, between which there is an interstitial reticulum of more translucent tissue. Considerable difficulty was experienced in obtaining satisfactory sections for microscopical examination, in consequence of the great opacity of portions of the growth and of the extreme friability of the tissue; the following appear, however, to be the most important characters.

The bands forming the primary septa consist of ordinary dense white fibrous tissue, and are of the same structure as the capsule, of which they may be regarded as prolongations. They are distinctly fibrillated, and present the ordinary connective-tissue nuclei and a few delicate fibre-cells, much elongated and possessing nuclei and granular contents.

The more delicate semi-translucent bands or trabeculæ, which penetrate the white masses, consist of an indistinctly fibrillated stroma. They are not themselves nucleated, but are accompanied by heaps of very small bead-like nuclei, which lie along the edges of the trabeculæ at the borders of the opaque spots.

The opaque masses consist entirely of cell-like elements, which may be easily separated from one another, and are seen to float freely on the field of the microscope. They have an irregular contour, most of them exhibiting an angular or obscurely circular outline, but some are caudate. Their surfaces refract light strongly, and look as if they were rough or granular. Each cell contains a nucleus and nucleolus, which can always be distinguished, in spite of the opaque granular character of the material by which it is surrounded. On the whole, these cells remind the observer of those of degenerated epithelium.

It is important to notice that the nuclei of the cell-like bodies are identical in size and form with those constituting the layers of nuclear

tissue already referred to, and by which the opaque masses are surrounded.

With regard to the chemical nature of the tumour, it appears that the opacity is due rather to the structure of the cell-like elements and the presence of fatty matter, than to any inorganic deposit in the tissue. The following experiments tend to prove that a process of fatty degeneration, but not of calcification, has taken place.

1st. Very numerous crystals of cholesterine are found on breaking down the opaque masses.

2nd. When heated on platinum-foil, the cheesy substance fuses readily, catches fire, and burns with a smoky flame, leaving a carbonaceous residue; and, on complete combustion of the latter, only a very small percentage of inorganic matter remains.

3rd. The white masses are readily dissolved in a weak solution of potash when gently warmed, from which, on evaporation, a soapy mass is obtained. *3rd December*, 1867.

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4. *Scirrhous tumour of the breast, complicated with lacteal tumour.*

The specimen was a breast, recently removed by Mr. Wood from a nursing woman, aged 40. It showed a hard, gristly growth, with a well-marked cancerous section, exuding the usual cancerous juice and affecting the upper and inner lobes of the right breast, of nine months' duration, and having commenced by a hard swelling near the base of the nipple. The patient was suckling her child (from the other breast chiefly) at the beginning and during the growth of the tumour. For the space of two inches above and to the inner side of the nipple, the skin was in places depressed and adherent to the growth. The nipple was retracted deeply, and drawn more upwards than downwards. It felt hard to the touch, and immoveable upon the neighbouring tissues all round. The lower and outer lobes of the breast showed, among a normal secreting structure, the ramifications of enormously-dilated ducts, which, at the time of the operation, were tensely distended with inspissated but still fluid milk, that followed the stroke of the knife in streams, as it cut through some outlying portions.

These portions were subsequently carefully dissected out, and a large portion of adherent skin above the nipple was taken away with the breast and tumour and other structures close down to the pectoral muscle.

The patient was stout, fat, and in apparently good condition, but with rather an anxious look and depressed spirits. The tumour seemed to have commenced during pregnancy, at or near the base of the nipple, among the diverging lactiferous ducts.

As the cancerous deposit progressed, its contraction had gradually, but completely, obstructed these ducts, and caused accumulation of the milk, and consequent dilatation of the ducts to the smallest ramifications. The walls of the ducts were thickened and hypertrophied, but not affected at this part by the cancerous growth, as the gland was here soft, yielding, and natural to the naked eye and touch, and no cancer-cells could here be distinguished under the microscope.

The tumour affecting the upper part presented the usual naked-eye and microscopic appearances of scirrhus of the breast. The patient did very well after the operation; none of the axillary or other glands had become affected. An abscess formed in the lower and front part of the axilla, which was opened and discharged healthy pus. The wound healed slowly, and it was a long time before complete cicatrization was effected, on account of the amount of surface-tissue which it had been necessary to remove. When last seen she was quite well, and had recovered her health and spirits surprisingly since the operation. Mr. John Wood, 19*th November*, 1867.

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5. *Sarcomatous tumour among the muscles of the leg.*

The recently amputated limb was exhibited for the purpose of showing the fresh naked-eye appearances of the growth.

History.—In March, 1866, the patient (Margaret A.), a remarkably fine, well-developed woman, 34 years of age, had a severe fall, and a heavy stool struck her left leg over the inner side of the tibia somewhat below the middle. She "fancied," but could not be quite sure, that before this there had been a slight swelling at or about the spot struck.

Soon after the accident, swelling of the part became very manifest. This steadily increased. At times the patient experienced severe pain. Her health, which previously had been very good, began to suffer. No other member of her family, so far as she knew, had ever suffered from cancerous or other morbid growths.

In July, 1867, the patient was admitted into Guy's Hospital. The tumour was then apparently about two inches in diameter, oval in

outline, smooth, semi-fluctuating, and somewhat tender on pressure. The skin was not implicated. An exploratory puncture was made with a fine trocar and cannula. There only escaped a few drops of blood.

In the course of a few days the patient went home at her own desire, and on her own judgment applied poultices. The tumour rapidly increased.

On the 19th October the skin gave way over the most prominent part, and blood escaped by drops. Two days afterwards the opening through the skin became much enlarged. Large clots came away, and fluid blood to the extent probably of half a pint flowed freely. Bandages were applied, but the hæmorrhage recurred on the two following days.

On the 24th October the patient was admitted into Guy's Hospital under the care of Mr. Durham. The swelling was very large, ill-defined, and semi-fluctuating. Loose coagula hung through the oval opening in the skin. The opening, already an inch and a half in length, was freely extended by incision, and three-quarters of a pint or more of mixed firm and breaking-down clot and half fluid blood were turned out.

The cavity was mopped out, and pads and bandages were applied. When these were removed on a subsequent day the presence and appearance of the new growth became manifest. Amputation of the limb was decided upon, but delayed in consequence of a severe attack of phlebitis, which commenced in the saphena vein of the opposite limb. The new growth rapidly increased, and the ulcerated surface steadily extended.

On the 19th November, amputation above the knee was performed by Mr. Durham. For some days the patient seemed likely to do well. In the course of a week symptoms of phlebitis reappeared. The patient became pyæmic, and died on the 18th of December.

At the *post-mortem* examination numerous patches of lobular pneumonia were found in each lung. The veins of both lower limbs were filled with clots of various ages. No indications of cancer, nor of any allied disease, were found in any of the viscera or lymphatic glands.

Examination of the amputated limb showed that the new growth to a considerable extent involved the muscles and fibrous structures somewhat below the middle of the back of the leg. The largest section of the tumour appeared to correspond in position with the

layer of fascia between the superficial and deep muscles. Indeed it seemed as though the growth had commenced in or about this fascia at its connection with the tibia, and then spread superficially through the soleus muscle and deeply through the flexor longus digitorum and tibialis posticus. The muscles seemed all indurated together where they were penetrated, and scarcely any vestiges of the deep fascia could be traced in the middle of the growth.

The growth extended to the periosteum of the tibia, but the bone was not implicated.

The growth itself was of soft fleshy consistence to the touch, but appeared toughish to tear. A considerable quantity of blood was effused into its substance in patches; thus the section had a somewhat piebald appearance, the pellucid, greyish-coloured, new growth contrasting strongly with the blood.

The microscope revealed in some parts of the tumour little else than ordinary wavy connective fibres. The cellular elements, consisting of round and spindle-shaped cells, faint in outline, could only be perceived on close examination. In other parts the cellular elements were aggregated together, but not to any great extent. Acetic acid brought out an appearance of stellate cells, some of which presented a gyrate arrangement. Very few loose corpuscles appeared in the field.

I am much indebted to my colleague, Dr. Moxon, for notes of the minute appearances of the tumour.

Remarks.—The speedy death of the patient, from causes independent of the morbid growth, deprives this case of much of the interest it might otherwise have possessed. The various questions respecting the recurrence of such-like tumours—questions of the greatest pathological interest and practical importance—are unfortunately left altogether unanswered.

The rapidly increasing swelling after the exploratory puncture and the severe subsequent hæmorrhage suggest the idea that some vein involved in the growth may have been wounded, but this could not be clearly made out on dissection. The occurrence of phlebitis in both lower limbs previous to, and therefore independently of, the amputation, is worthy of note.

Mr. DURHAM, 19*th November*, 1867.

6. *Specimen of recurrent cancer of the breast treated by acetic acid.*

A female patient, having undergone two operations for the removal of cancer of the breast, came under the care of Mr. Moore with cancer of two corresponding axillary glands. These he by a third operation removed. In a few months she returned to Mr. Moore's care, having four cancerous nodules of the size of peas in and near the scars of the first and second operations. At various times during several subsequent months, Mr. Moore injected each of these nodules with acetic acid. In the course of a month after injection, each nodule would entirely disappear; but after a couple of months more it would return. After having removed all the tumours by the acid, Mr. Moore employed a needle connected with an india-rubber ball and tube, invented by Mr. Clover, and caused a solution of acetic acid to trickle slowly out far into all the textures in which the nodules had grown. In August, 1867, the patient left Mr. Moore's care without any trace of remaining cancerous disease; but in November she came back again, having in other situations about the first scar three distinct subcutaneous cancerous nodules, one of which was as large as a cherry-stone. Mr. Moore at once excised the whole mass of scar, nodules, and surrounding textures.

The specimen consists of a linear cicatrix, having on each side of it skin with the pores a little enlarged, and beneath it two small, hard, cancerous nodules; a third infiltrating mass, which was flat and firm, and was white and wavy on section; one cyst-like cavity, as large as a cherry-stone, and filled with liquid fat; and numerous black streaks or fine cords running in various directions through healthy subcutaneous textures. The first consisted of ordinary microscopic nucleated cells of scirrhus, and a small quantity of fibrous stroma; the second when magnified was almost wholly composed of white, wavy, interlaced, fibrous tissue, enclosing spaces in which were nucleated cells and oil-globules; the third, which flowed out in the operation, appeared to be pure oil; the last was pigment, probably the residue of blood poured out in the tracks of the numerous punctures with the hypodermic needle. Mr. C. H. Moore, *3rd December*, 1868.

Report by the Committee on Morbid Growths on specimen of recurrent cancer exhibited by Mr. Moore.—The specimen submitted to the Committee consists of a piece of skin, three inches in length by one inch to half an inch in width, with a sinuous linear cicatrix, about one inch

and a half long; in the middle, attached to it, are portions of subcutaneous areolar and adipose tissue and a quantity of muscular fibre. The whole is greatly indurated by the action of the spirit in which it has been preserved; in consequence of this induration the morbid appearances described by Mr. Moore, although still traceable, are somewhat indistinct. A section through one of the firmer masses discloses a fibrous structure dotted with yellowish points. On microscopical examination, the stroma is seen to consist of interlacing bands of fibres, the majority closely resembling the ordinary white fibres of connecting tissue; but there are also present a considerable number of yellow tortuous fibres. In the interspaces between these fibres there lie fat-cells, of which the yellowish points mentioned above are found to consist, and also numerous collections of minute cells, averaging rather less than $\frac{1}{3000}$th of an inch, but so shrivelled that it appeared hopeless even to guess at their original characters. Nothing, however, was found which could throw the least doubt on the accuracy of Mr. Moore's description of them in the recent state. Here and there, among the bundles of fibres, were collections of granules and nuclei-like bodies, whose appearance and arrangement suggested the idea that so-called proliferation of the nuclei of the areolar tissue was taking place. *7th January*, 1868.

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7. *Peri-angeioma of scalp; excision; recovery.*

George L., aged 16, a gardener by occupation, and who seemed a strong healthy lad, stated that he did not notice anything abnormal with his scalp until he was 12 years old. At that age a small swelling appeared over the course of the sagittal suture, which gradually enlarged and became softer. It was never painful; the skin covering it had never ulcerated, nor had any escape of the contents of the tumour occurred. Until he came to Guy's Hospital, on November 20th, 1867, no treatment had been adopted. The growth then covered the whole length of the sagittal suture and the adjoining portions of the parietal bones, being exactly median in position (see Fig. 24). It was quite egg-like in shape; its long axis, which ran from before backwards, measured five inches in diameter; the transverse diameter was three inches and a half, and the vertical, at the highest point, was two inches and a half. The tumour was smooth on the surface and elastic, and fluctuated indistinctly on pressure; it was softer over a

space, one inch in diameter, on its left side, where there seemed to be a small protrusion from the general surface. It was painless, even when roughly squeezed; it did not pulsate, and when pressed caused no cerebral symptoms whatever. The calvaria could be traced by the finger, passing entirely beneath the tumour at its edges; and as far as one's finger could reach under the growth there seemed to be no erosion of the bone. The head being fixed, the tumour was still freely moveable upon the skull. There was no glandular enlargement in the neck. On November 29th, chloroform was administered to the

Woodcut 21.

patient, and Mr. Bryant excised the tumour, which was found to be closely connected with the skin and the tendon of the occipito-frontalis between which it lay, but not with the bone. The wound suppurated; but the boy left the hospital on December 20th quite well. In structure the growth proved to be peculiar, and it was christened "peri-angeioma" by Dr. Moxon.

Mr. Thomas Bryant, 17*th December* 1867.

*Report by the Committee on Morbid Growths on Mr. Bryant's tumour of the scalp.**—The tumour is encysted. It is separable easily and com-

* It is but right to state that this Report was drawn up by Dr. Moxon, and presented to the Society by Mr. Bryant when he exhibited the specimen. The Committee on Morbid Growths subsequently adopted Dr. Moxon's Report.—Ed.

pletely from the portion of scalp which was removed with it. Its cyst or capsule is thick and firm and in structure laminated, the laminæ being separable from each other for some space and then uniting together inseparably. This lamination of the capsule is most distinct in its inner layers; the outer layers are also tougher than the inner. The capsule cannot be raised from the body of the tumour: it sends in septa from the substance of its inner layers, and these septa divide up the tumour into large irregular-sized spaces. These spaces contain the peculiar tubes that give the tumour its remarkable characters. (Plate XIII. Fig. 1.) The tubes are about $\frac{1}{16}$ inch wide, some larger, some smaller; they are tortuous and folded mutually in large curves. They are not free, but are imbedded in an exceedingly soft and fragile connecting medium, which in the most characteristic parts is transparent and allows the tubes to be seen curving about within it, but in other parts is more opaque and yellowish; while in yet other parts it is defaced by hæmorrhage into its substance, which has taken place to a large extent in the deeper two-thirds of the tumour, so as to conceal the tubular structure.

The tubes, which are imbedded in the fragile connecting medium or stroma, can be isolated without difficulty to a length of an inch in most cases; but this cannot be done without breaking through other tubes. By such a dissection it is shown that the tubes branch at long intervals, and that the branches become again connected; so that the tubes form an imperfect network, whose meshes are not visible without dissection, because they are coiled up. When traced to their extremities, these tubes are found to be lost in the soft lamellæ that bound the spaces in which they are contained.

The tubes possess a central blood-vessel, imbedded in an opalescent whitish substance. The blood-vessel is seen as a fine thread running in the tube, and measuring only about $\frac{1}{2}$ of its diameter. This central vessel running down the whitish vermiform cylinder gives the tubes a singular resemblance to small worms. (Plate XIII. Fig. 1.)

When sections are examined with a low power, the tubes and the stroma in which they are imbedded can be well observed; and then it is seen that all the blood-vessels are not in these tubes; but some vessels of the size of common capillaries are present in part of the stroma. Also it is seen that the size of the vessel in the tubes is not directly proportioned to the size of the tubes, but that large vessels have but little of the tube-tissue around them.

DESCRIPTION OF PLATE XIII.

Figs. 1, 2, 3, and 4 illustrate the Report of the Committee on Morbid Growths on Mr. Bryant's Specimen of "Peri-angeioma" of the Scalp. From drawings by Dr. Moxon (p. 376).

Fig. 1. A small portion of the tumour, as seen with a low power, showing its tubular structure.

Fig. 2. The same, more highly magnified.

Fig. 3. A layer of elongated cells drawn out into fine fibres at their ends, and enclosing numerous smaller lymphoid bodies, among which are a few larger bodies, like those forming the stroma.

Fig. 4. Large rounded and caudate cells forming the inter-tubular stroma.

Figs. 5, 6, and 7 illustrate Dr. Moxon's Report on Dr. Allbutt's case of Villous Growth from the Pia Mater, forming the Tumour about the pons Varolii. From drawings by Dr. Moxon (p. 22).

Fig. 5. Dendritic villosities, forming the surface of the tumour, viewed with 1½-inch object-glass.

Fig. 6. The same, as seen with ½-inch object-glass.

Fig. 7. Nuclear formation surrounding the blood-vessels, as seen with ½-inch object-glass.

Fig. 1.

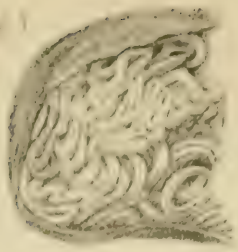


Fig. 5.

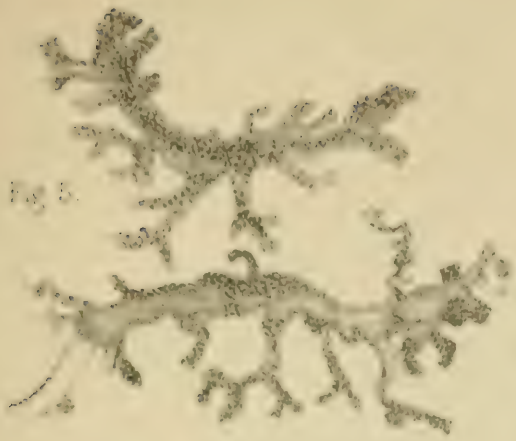


Fig. 4.

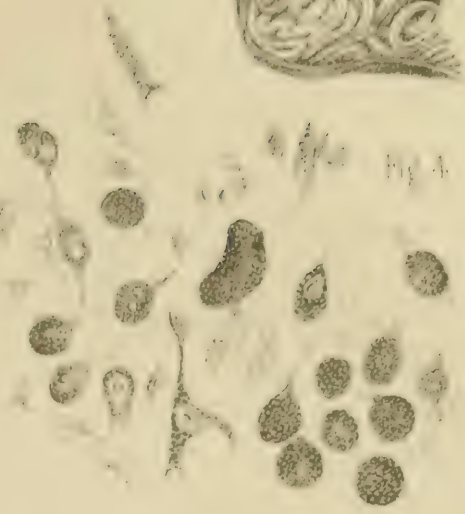


Fig. 6.

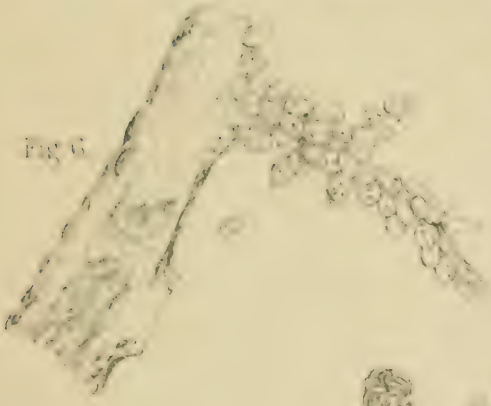


Fig. 7.

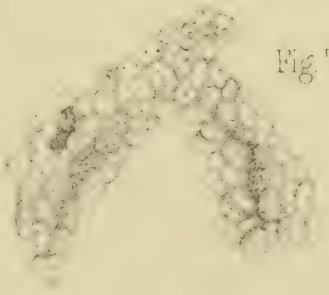


Fig. 3.

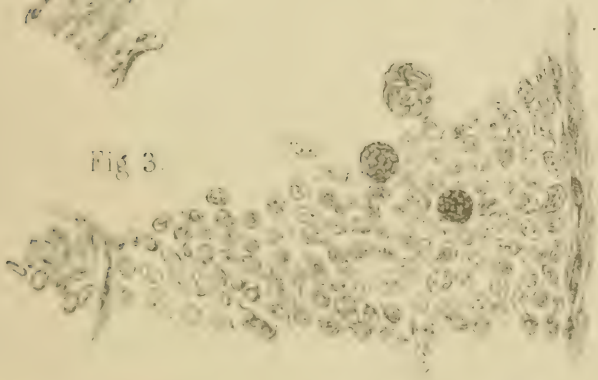
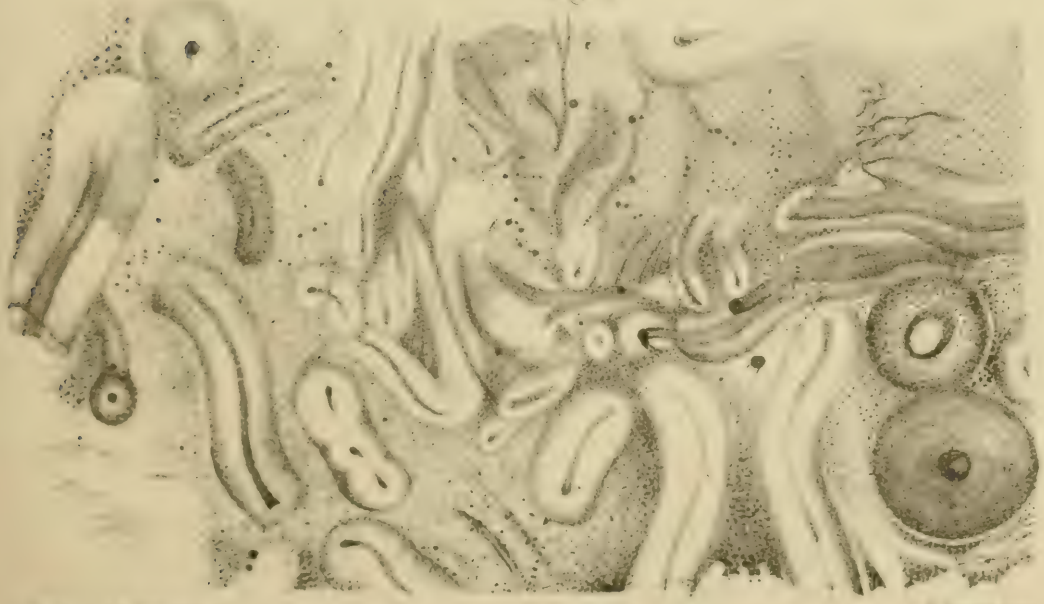


Fig. 2.



The parts of the section in which the extra-tubal vessels are present are those in which the large vessels with little of the peri vascular matter are also present.

Those tubes which are well characterized are all of about one size; there is a little variety, but only a little. The size of the vessel shows a certain constancy. These well-characterized tubes are seen collected in parts of the section distinct from the less regular portion just before described. These latter less regular parts represent points of connection of the tubes with the laminated dissepiments of the tumour.

When these sections (which are very difficult to procure) are made and examined by a higher power—$\frac{1}{5}$ inch, the following elements are found present:—

1. In the inter-tubular stroma there are large "cells," with nucleus and nucleolus and granular cell-contents, the cells sending out processes, which in some cases are of large size and granular and join neighbouring cells; others and most of them, indeed, unite with the excessively fine filaments in which the cells are imbedded; these filaments are not fasciculated, are faint in outline, pale, and excessively fine in diameter. The cell-contents are, in a majority of cases, full of large fat-grains, so that a large proportion of the cells have the appearance of the common so called "granule-cells." (Plate XIII. Fig. 4.)

2. In the tube-structure the exterior limit of the tube is made by a triple or quadruple layer of elongated corpuscles, which are cells drawn out into fine fibres at the ends, these fibres joining the like processes of their neighbours; they are arranged round the tubes transversely.

The wall of the central blood-vessel is made up of very similar elements, but the caudate ends are shorter and broader, so that a spindle-shape is produced: of these there is a single layer. (Plate XIII. Fig. 3.)

Between these two coats the substance which gives the whitish pellucid appearance is found; this is composed of corpuscles of the size of lymph-corpuscles, which a careful study shows to be connected together by very delicate and fragile matter, forming processes, at least when the elements are nearly isolated. Among these smaller lymphoid bodies are a very few larger bodies, like those forming the stroma. It should be distinctly stated that the corpuscles in the circum-vascular substance are closely crowded together, while

the corpuscles of the stroma imbedding the circum-vascular tubes are at twice to thrice their diameter, or even much further, apart.

We did not find that any vessels were to be seen in the circum-vascular tube-substance. *18th February*, 1868.

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8. *Recurrent tumour of the breast.*

The patient, aged 28, mother of two children, as reported in the '*Pathological Society's Transactions*,' vol. xviii., p. 255, was discharged from the Middlesex Hospital on May 7th, 1867, with a sound cicatrix, the original tumour having been removed on March 16th, 1867. Within three weeks of leaving the hospital, the patient discovered a fresh outgrowth; and on her readmission in July, a mass the size of two fists was to be seen at the site of the first growth. On the 31st of July, Mr. Nunn repeated the operation of removal; it was evident, however, that the morbid structure had extended through the intercostal spaces, and that consequently the operation could not be other than incomplete. Perchloride of iron was very freely applied to the raw surface. The patient afterwards suffered no constitutional disturbance or pain. The wound had not time to cicatrize before a renewed sprouting of the growth occurred. No astringent or escharotic had the least beneficial control over the growth; and the patient died from exhaustion on October 23rd, 1867.

The *post-mortem* gave only negative results as regards other diseased conditions of internal organs.

The specimens exhibited are two in number; one, the smaller, is the mass removed by the second operation, on July 31st. The larger includes the sternum, with portions of ribs and the cartilages, removed after the death of the patient, and shows externally a large bulk of tumour and internally or on its pleural aspect, some tuberose extensions of the tumour which have invaded the thoracic cavity. These tubers present no central depression, like the tubers of cancer, but are semi-globular and covered tensely by the pleural membrane and the stretched intercostal muscular and other fibres.

The death of the patient was similar to that of a patient killed by cancer: thus far the disease resembled cancer; but the microscopic sections showed that the cell-elements of the tumour betrayed no irregular development and intrinsic tendency to degeneration. The cells appeared to have a maturity definitely marked by a certain size, and to possess a persistent vitality. The inflammatory phenomena

being dependent on extrinsic irritation (accidental, so to speak), and not, as in cancer, being the consequence of intrinsic atrophic change.

The microscopic sections show, besides a nearly uniform mature cell-development, a very delicate trabecular fibrillation.

Mr. T. W. NUNN, *4th February*, 1868.

Report by the Committee on Morbid Growths on Mr. Nunn's "recurrent tumour of the breast." – We received for examination the sternum and ends of the ribs, with certain soft parts attached.

A large lobulated tumour lay on the anterior aspect of the chest-wall, occupying the position of the right mammary gland and extending thence in several directions. The growth had penetrated several of the intercostal spaces, causing erosion of bone in its passage, and appeared within the thorax, forming rounded protuberances underneath the costal pleura.

These parts, which had been removed after death, were accompanied by a large mass which had been taken away during life.

As to the naked-eye appearances of the morbid growths, we have nothing to add to the description furnished by Mr. Nunn. When they came into our hands they had obviously lost much of their original colour, translucency, and texture.

We have examined with the microscope many parts of both growths, having been materially assisted by some sections forwarded by Mr. Nunn, which had been made while the structures were fresh.

The tumour consists of a filamentous tissue abounding with nuclei, and would be generally classed as a fibro-nucleated tumour. (See Plate XIV. Figs. 1, 2, 3, and 4.)

The basis of the mass is a delicate, transparent, filamentous material, which exists in some places in considerable abundance, occupying broad spaces between the nuclei; while in other parts this structure is scarcely to be seen between the multiplied and crowded nuclei.

The nuclei, imbedded in the substance of this filamentous material, vary in shape, as shown in the drawings (Plate XIV.), from round to long oval, and even assume more or less irregular or stellate shapes, owing to their elongation in more than two directions. The nuclei vary in size, often display nucleoli, and frequently exhibit a tendency to fatty degeneration.

In some parts of the mass the nuclei are so closely packed that no intervening material is seen; in other places these are few and scattered. Where they are most abundant they are round, or nearly so;

where more sparsely distributed they are spindle-shaped or irregular, as described. They frequently extend into fibres.

The nuclei are mostly arranged in a concentric manner around what we believe to be blood-vessels, being round and closely placed next to the vessel, while towards the circumference of the system they are elongated and scattered. This method of growth—the accumulation of the formation around branching vessels—has given a lobulated form to the mass, the central line of each lobule being a blood-vessel. The lobules or cylinders, of which the growth essentially consists, vary in size from rounded masses obvious to the naked eye to small cylinders only to be discerned by microscopic examination. One of the smaller ones is represented in the drawing (Plate XIV., Fig. 3). *7th April*, 1868.

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9. *Congenital cystic tumour from coccygeal region of an infant.*

This tumour was removed from a girl, nine days old, by the *écraseur*, on February 6th, 1868. Before removal it measured five and a half inches by four and three-quarters, was rather flattened out, and presented at two spots a distinct cystic appearance.

The skin over the whole tumour was inflamed, and a watery fluid oozed from a sloughy patch in one of the cyst-walls.

Its attachment was apparently to the upper part of the coccyx; there was no communication with the spinal arachnoid.

On section the tumour was composed of a congeries of cysts, held together by a fibro-cellular network. The cysts varied in size from an orange to a pin's head; some contained an albuminous fluid, others pus.

The baby is recovering.

On referring to vol. xi., page 268, of this Society's *Transactions*, a somewhat similar tumour was removed from the occipital region of a child 12 months old, by Mr. Nathaniel Ward, at the London Hospital, in the year 1860. This child recovered also.

Dr. Richard Davy, *17th March*, 1868.

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10. *Cancerous tumour growing between the rectum and bladder.*

This specimen was removed from a child, aged 14 months, under Mr. Smith's care at the Children's Hospital. Two months before admission the mother noticed that the child had difficulty in passing the motions, and soon afterwards that he strained when passing water,

DESCRIPTION OF PLATE XIV.

Figs. 1, 2, 3, and 4 illustrate the Report of the Committee on Morbid Growths on Mr. Nunn's Specimen of Recurrent Tumour of the Breast. From drawings by Dr. Bristowe. Figs. 1, 2 and 3 are magnified 220 diameters. Fig. 4 is magnified 420 diameters (p. 380).

Fig. 1. From a section of the tumour, in part of which the cells are much clustered, and from the clustered portion of which bundles of fibrils, with elongated cell-like bodies or nuclei, pass off in several directions, and thus leave between them circumscribed loculi or spaces.

Fig. 2. Represents some of the rarer part of the tumour, in which the cell-like bodies have no definite direction, and in which they are often stellate, and may be seen to communicate with one another by delicate processes.

Fig. 3. A section through what is supposed to be a vessel, showing an irregularly concentric arrangement of nuclear growth around, the nuclei becoming less and less abundant the further they are from the vessel, and becoming at the same time rarer and more elongated until the tissue closely resembles that represented in fig. 2.

Fig. 4. Cells of various forms, as seen by $\frac{1}{8}$-inch object-glass.

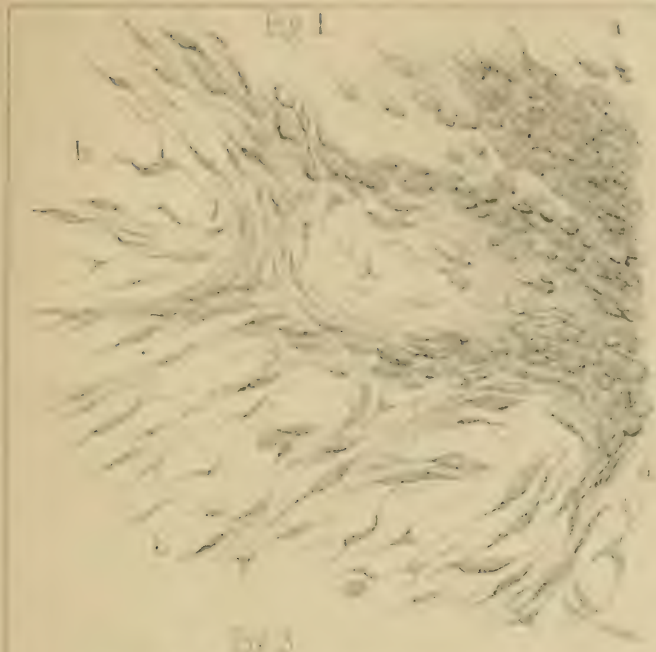
Figs. 5, 6, 7, and 8 illustrate Dr Bristowe's case of "Colloid Cancer" of the Cardiac Extremity of the Stomach, Glands, and Lungs. From drawings by Dr. Bristowe (p. 228).

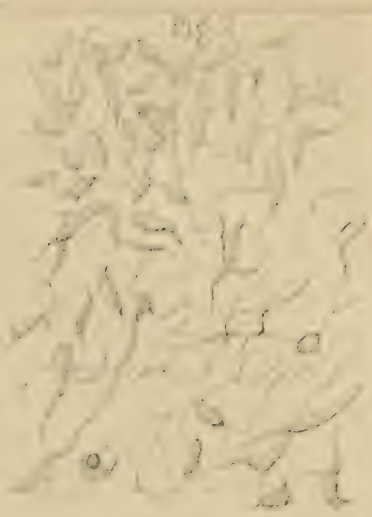
Fig. 5. Fibrous stroma from colloid deposit in the lungs.

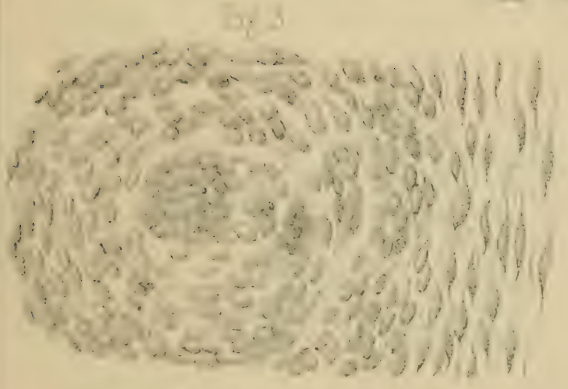
Fig. 6. Cells from the deposits in the lungs.

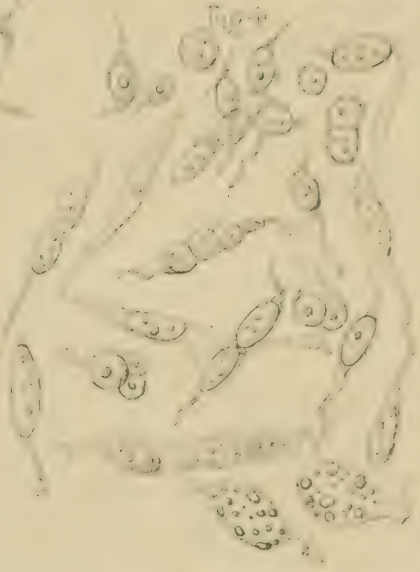
Fig. 7. Nuclei from ditto.

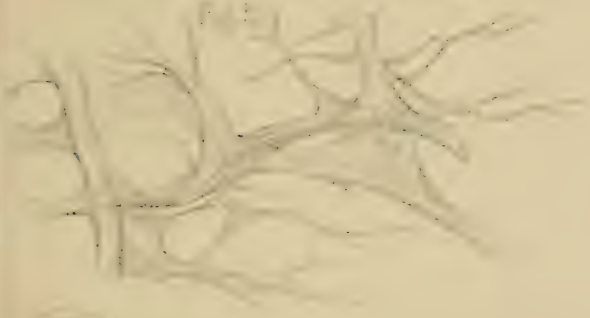
Fig. 8. Cells from glands in the neighbourhood of the cardiac extremity of the stomach

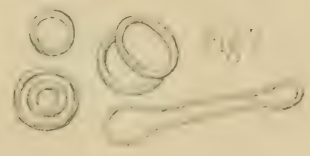


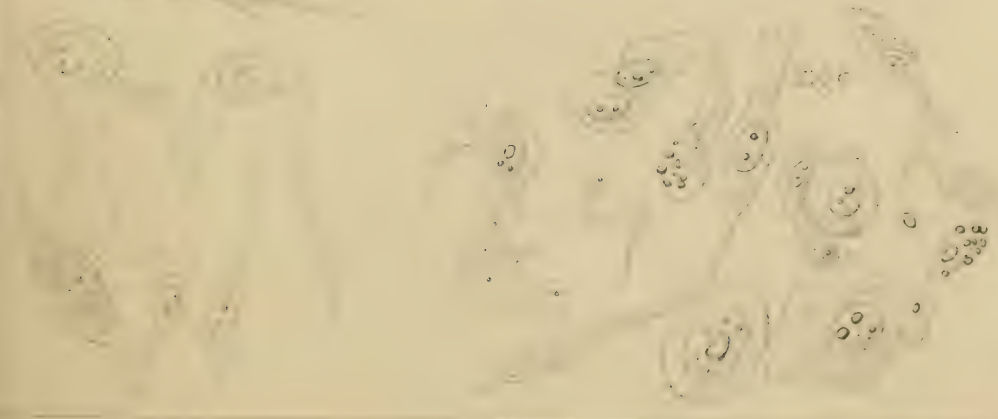












and that occasionally the urine dribbled away. These symptoms increased in severity, and the child seemed at times to have pain in the belly. A month ago a hardness and swelling were noticed in the lower part of the abdomen; these have gradually increased. A month ago retention of urine came on, which was relieved by the catheter. At no time has any blood been seen in the urine.

On admission the child was suffering from complete retention, which could not be relieved by a catheter.

The lower part of the abdomen was occupied by a firm tumour, having the outline and dimensions of an over-distended bladder. A hard rounded mass in the situation of the prostate was found pressing downwards into the rectum. An attempt was made to draw off the water under chloroform; and this failing, the bladder was punctured over the pubes with a fine trocar, and half a pint of urine was drawn off; through this opening all the urine flowed until the time of the child's death, which took place a month later and three months after his first symptoms.

The tumour in the abdomen somewhat diminished after the escape of the urine; but subsequently it increased rapidly in size, extending to some distance above the umbilicus, and pushing the bladder in front of it into the epigastrium.

The tumour felt during life proved to be a large malignant growth springing from the recto-vesical pouch, filling the pelvis, and growing upwards into the abdomen behind the bladder, which was greatly elongated, especially about the neck, the fundus lying above the level of the umbilicus. The coats of the bladder were greatly hypertrophied, but otherwise healthy. The uvula vesicæ was as large and about the same shape as an adult supra-renal capsule, so as to have formed a complete barrier to the passage of an instrument. There was no ulceration of the mucous surface. The tumour was partly solid, but in the upper part were numerous cysts containing a semi-fluid substance. The pelvic absorbent glands were enlarged and firmly adherent to the sides of the tumour.

Mr. Thomas Smith, 17*th March*, 1868.

11. *Medullary tumour removed from the tendon of the rectus femoris muscle.*

A delicate, spare woman, 31 years old, came to Mr. Paget at St. Bartholomew's, in September, 1867, complaining of a bad knee. On examining it, there was found growing apparently in or upon the patella a tumour considerably larger than a hen's egg. It had a wide base, and measured three inches and a half in the long axis of the limb, and two and a half transversely. Its surface was made uneven by many low indistinct lobes. In some parts it felt nearly as hard as bone, but in others, chiefly over the lobes mentioned, it was soft and elastic. Pressed from side to side, the mass, including the patella, moved freely over the condyles of the femur; but there was no evidence of any movement between the mass and the patella. The skin over the tumour was healthy and non-adherent. No disease could be found elsewhere in the limb; the femoral glands were not enlarged; the muscles on the front of the thigh were wasted, but not excessively so.

The patient said that seven years before she found her knee weak and painful after exercise, and she noticed a slight enlargement, as she supposed, of her knee-cap. During the following five years the joint became gradually more disabled, and was often painful and swollen; but throughout this time the tumour altered very little. In the last two years, however, and especially in the last six months, the mass had grown rapidly, and she had been wholly prevented from walking by pain and weakness of the joint.

It was believed that this was a growth within the patella,—probably a myeloid, or an enchondroma; possibly it was a medullary disease. But, whatever its nature, there seemed no doubt that it should be removed. After the patient had rested a few days in the hospital, Mr. Paget exposed the mass and cut into its substance, when it was found to have all the naked-eye appearances of a fibrous tumour, growing amongst and expanding the fasciculi of the tendon of the rectus. The patella was buried beneath its lower part. The tumour was separated from the joint above and at the sides of the patella only by a very thin layer of synovial membrane closely adherent to it. As it was impossible to remove a tumour so placed without opening the knee-joint, Mr. Paget cut it and the patella clean away, and with them the subjacent synovial membrane, thus laying the articulation widely open in front. This done, the skin was replaced and sutured, and the limb placed upon a back splint. After such an operation it

may be supposed that the patient was for many days in great risk of grave complications; but these she escaped, and the wound healed without any great inflammation of the joint, or any serious constitutional disturbance. At length, being very anxious to go home, the patient left the hospital, with the parts apparently soundly healed, and with the limb in a perfectly good position. Within a fortnight, however, she had pain and swelling of the joint, and the knee became turned inwards. At the end of three weeks from this time she was readmitted. The knee was now much enlarged, and the bones were displaced inwards; the skin was dark-red and inflamed, and the pain was severe. She continued to lose ground, and a few days later, as it was evident she would sink unless relieved, amputation through the thigh was performed. She rallied after the operation, and for a time improved in general condition, but then she became greatly emaciated and died about three weeks after the removal of the limb.

On dissecting the knee, a large mass of medullary disease was found in the parts in front of the lower end of the femur, and the condyles of the bone were extensively excavated by rapidly-degenerating cancer, infiltrated widely in the cancellous tissue. At the *post-mortem* examination secondary deposits of cancer were found in the bodies of the lumbar vertebræ and in the third left costal cartilage, but not elsewhere. Mr. F. Howard Marsh, *7th April*, 1868.

Report by the Committee on Morbid Growths on Mr. Marsh's tumour from the extensor tendon of the knee, involving the patella.—The tumour is a slightly lobulated, egg-shaped mass, two inches and three-quarters in its longest, by one inch and three-quarters in its shortest diameter. On one surface is exposed the articular surface of the patella, the bone itself being imbedded in the substance of the tumour. At either end a portion of the tendon, apparently healthy, is still visible.

The tumour is made up of bands of firm fibrous tissue, between which lie lacunæ of greater or less size. Near the circumference of the mass, and especially at its ends, the bands of fibrous tissue lie closer together, and the structure is consequently firmer and denser; the general direction of the bands is parallel to the long axis of the tumour. The lacunæ are filled with cells of various sizes and shapes, and seem to contain also a little granular matter. In the field of the microscope, at the same time, may be seen cells spherical and oval, more or less angular, fusiform, pear-shaped, caudate, nucleated—nucleoli also being present in many—and of the average diameter of

$\frac{1}{1500}$ to $\frac{1}{2000}$ of an inch; they undergo little or no change on the addition of acetic acid. Here and there these cells are aggregated in groups of from ten to twenty, apparently enclosed within a common capsule.

The cells present the same characters throughout the tumour, varying only in number with the greater or less size of the lacunæ. The tumour is confined to the tendon, the patella, although imbedded in the mass, having undergone no alteration in structure at any part.

5th May, 1868.

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12. *A case of cystic disease of the female breast—probably malignant.*

Miss V——, an unmarried lady of 48 years of age, but looking younger, of dark complexion, good features, well nourished, and looking well in every respect, came under my care on March 26th, 1868, with a painful tumour of the left breast.

The tumour had been noticed by the patient for two years, but had only become painful within the last few months, during which it had very much increased in size.

When first seen by me it was of the size of an adult fist, with roundish nodules in the circumferential parts, a retracted nipple, and firm consistence, with the exception of a space of the size of half-a-crown above and external to the nipple, which presented distinct fluctuation.

The tumour was freely moveable on the subjacent muscle, and the skin covering it glided freely over its surface, except over the fluctuating space above alluded to, where the deeper part of the skin was evidently adherent and very slightly discoloured, as if from a bruise.

There was an occasional discharge from the nipple.

The axillary glands were not affected, and the general health seemed quite unaffected.

The breast and tumour were removed on March 26th, 1868, with the nipple and a portion of the surrounding skin. The peripheral portion of the tumour presented numerous cysts of about the size of a hazel-nut and a few of the size of walnuts, containing dark-red fluid with a tinge of sienna-brown—altered blood, in fact. Some of these cysts contained intra-cystic growths of a cauliflower form. The central portion of the mass had a firm, crisp texture, and a milky juice exuded from it; it was marked by fibrillations, chiefly running vertically from the nipple, with which it was intimately connected; and it resembled ordinary scirrhus, both in its naked eye and microscopic structure.

The structure of the cauliflower intra-cystic growths was very peculiar. Each mass was made up of a number of minute vegetations attached by branching pedicles to a central pedicle, which itself was attached by a broad base to the central mass of the tumour. The cyst-wall formed a capsule enclosing the intra-cystic contents, in the same way as the capsular ligament of the hip-joint encloses the head of the femur.

Examined microscopically, the minute papillary vegetations were seen to be marked superficially by complex convolutions resembling those of the brain, in which the ridges and sulci, however, were more distinctly pronounced. These ridges were made up of rows of columnar epithelium, and the interior of each papilla was freely supplied by vessels. These appearances gave me the impression of a papillary growth; but it is just possible that the columnar epithelium may have been the lining of a cavity which resulted from some alteration in the original gland-follicles. This would be easily determined by the position of the basement-membrane, which I was unable to make out.

April 22nd.—Since the operation the wound has healed rapidly, and the patient's health is improving. At the end of a fortnight she sat up, and she was downstairs before the end of a month.

Mr. W. Spencer Watson, 21*st April*, 1868.

Report by the Committee on Morbid Growths on Mr. Spencer Watson's case of tumour of the breast.—The tumour which we have been requested to examine appears to belong to that variety which has been described as "Sero-cystic Sarcoma." The cysts and the projections into their cavities are such as belong to this kind of growth, while we have not been able to find any structure which could confidently be described as scirrhus. Large masses of fibrillating fibrous tissue were seen, beside many scattered nucleated cells and simple and compound oil-globules. We were unable to discover any trace of the alveolar structure which is characteristic of cancer. 19*th May*, 1868.

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13. *Fibro-cellular disease of mamma; excision; recovery.*

Louisa H——, aged 34, a married woman, mother of five children, in 1864 received a violent blow in the street upon the upper part of her left breast; but she felt no considerable consequent pain or other

inconvenience for any length of time. About ten or twelve months subsequently, five weeks after parturition, and when she was suckling with both breasts, an abscess formed in the abdominal lobes of the same left mamma (therefore, not at the part injured on the former occasion), which was opened, and discharged almost a pint of pus. The wound healed, but an indurated mass remained, which was occasionally painful.

The mamma began to enlarge again about August, 1867, in the clavicular lobes—consequently, at a part quite distinct from the site of the above abscess; the patient was then six months advanced in pregnancy. She was confined in November, 1867, and suckled the child with the right mamma until March 17th, 1868, when she consulted Mr. Bryant, and was by him advised to wean her infant at once. During this period a little milk came from the left breast; but the child was never placed to it. The tumour enlarged rapidly after this last confinement.

She was admitted into Guy's Hospital on April 29th, 1868. The left mamma was then of large uniform size, its base being seven inches broad by eight long, and in circumference it measured twenty-five inches. The skin was not adherent, though tightly stretched over it; the tumour was not in the least attached to the pectoral muscles. It was hard, solid, elastic, and did not fluctuate at any part; its surface was a little nodulated, and of elevated temperature. The nipple was not retracted. The cicatrix remaining from the former abscess was present, but no distinct local hardness unconnected with the general tumour could be recognized. No enlargement existed in the axilla. The patient's general health seemed good; but she complained of debility.

May 5th.—The breast was excised in the usual manner, the cut vessels being secured by torsion. The tumour weighed four pounds thirteen ounces.

June 3rd.—Wound nearly healed; the patient is taking a walk daily and is regaining her strength, being convalescent.

Mr. Thomas Bryant, *5th May*, 1868.

Report by the Committee on Morbid Growths on Mr. Bryant's case of tumour of the breast.—By the microscope the tumour was found to be composed of fibro-cellular structure in various stages of development. A certain portion was made up of wavy tissue fully formed. A larger portion was composed of elongated cells and fibre-cells splitting up

into bundles of wavy tissue, and in this structure a large number of nuclei were observed. In addition to these elements, simple cell-structures were observed in various portions of the tumour. These cells were for the most part closely packed together, so that in a section composed chiefly of wavy tissue and fibre-cells, here and there an accumulation of simple spherical cells could be seen.

This examination proves the growth to be a fibro-cellular tumour.

19th May, 1868.

14. *Ulcerated follicular epithelioma on right temporal region; excision of the growth and lymphatic glands; recovery.*

A healthy-looking, provincial brick-maker, aged 67, was admitted into Guy's Hospital in January, 1868. Occupying the right temporal region of the head there was an ulcerated new growth, from which an ichorous and most offensive discharge constantly flowed. A tumour began to form twelve years ago; it slowly increased; and nine months since it broke, after having increased rapidly for about three months. It sometimes bled freely and was always very painful.

The growth itself was sharply defined, being limited to the integuments, which were not infiltrated. It formed a cup-shaped cavity in its centre, was remarkably circular in its outline, and projected two or three inches in relief. The arteries usually felt in the region were not enlarged.

In February I excised the whole growth, leaving of course a large wound, as there was no integument of which to make flaps. The temporal muscle was laid bare for about an inch and a half, in consequence of the close and firm adhesion between its fascia and the capsule of the growth. The bleeding was insignificant. The malar bone and zygomatic arch were uncovered, and portions of them were rough, but no exfoliation from their surfaces occurred.

The growth was perfectly circumscribed posteriorly by a firm fibrous capsule, and none of the neighbouring tissues were infiltrated. So large a portion of its centre had sloughed that there only remained a thin layer of new tissue forming the circumference of the tumour. This displayed the elementary tissues of epithelioma.

Two lymphatic glands at the side of the face were slightly enlarged.

The wound healed favourably, although cicatrization was rather retarded by the movements of the temporal muscle and the necessity

for the removal of fresh epitheliomatous granulations over the external angular process of the frontal bone.

In March I removed two large lymphatic glands from the parotid region of the face, both of which were infiltrated with the elementary nucleated cells of carcinoma.

The wounds all healed steadily and soundly; and the patient left the hospital on April 28th, having been under treatment, after the excision of the growth, eighty-six days.

Whatever may be the ultimate result of the operation, he was at least temporarily relieved from great distress and suffering, and by an operation attended with very little pain.

Mr. Birkett, *5th May*, 1868.

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15. *Compound follicular growth on the back, and follicular scalp-tumours; their removal; recovery.*

A healthy-looking postman, 60 years old, was admitted into Guy's Hospital in March, 1868, on account of a tumour on his back, which had lately given him inconvenience. The existing growth began as a small lump fourteen years before, and for many years he was almost regardless of its presence.

Attached to the integuments of the back there was a tumour about three inches and a half long, extending nearly parallel with the posterior border of the right scapula, and resting on the fibres of the trapezius muscle. The skin covering its surface was red, and at one extremity curious yellow nodules were to be felt. It was firm and resisted pressure generally, although its outward appearances led to the impression that it was soft. Besides, on the head, there were two scalp-tumours; one in the left temporal region also showed a hard yellow body in its substance; a second, on the vertex, was of the ordinary appearance. They had been forming about two years.

The dorsal growth was excised some days before the others. Two or three rather full-sized vessels supplied it with blood; but it was only formed in the integuments, and was perfectly independent of the tissues beneath it.

A few days afterwards the scalp-tumours were removed.

All the wounds healed rapidly, and the man left the hospital well.

Mr. Birkett, *5th May*, 1868.

Report by the Committee on Morbid Growths on Mr. Birkett's "compound follicular growth from the back."— The tumour removed from the

back consists of a firm, somewhat elastic mass, measuring three inches in length and one and a half in breadth.

It has evidently been situated immediately beneath the skin, a portion of which has been removed with it. The surface is slightly nodulated, and one of the largest nodules has protruded through the skin, to which it is closely adherent; this nodule is partially detached from the general mass of the tumour.

On section it is found to consist of two substances; a firm, opaque-white, smooth material, collected into masses varying much in size and outline, and connected together by grey, semi-translucent fibrous bands. In the centre of the tumour is a small nodule of cheesy matter, which occupies its entire thickness and corresponds externally with a small plate of bony hardness, which is imbedded in the substance of the mass. Here and there, scattered throughout the growth, are smaller calcareous nodules.

Microscopical examination.—To determine the structure of this growth, sections were made in various directions, from which the following general idea of the arrangement of the elements has been obtained. The projecting part of the tumour is covered by a cutaneous layer of normal structure, the surface of which is papillary, and has been denuded of its epidermis. Beneath the skin is a layer of fibrous tissue, arranged in parallel bands.

The mass of the growth consists of a stroma, which is in some parts faintly granular, in others finely fibrillated, and in others, again, represented by bands of parallel fibres. These bands form a reticulum, the meshes of which are occupied by rounded or oval masses, consisting partly of a finely granular and very translucent interstitial substance, partly of aggregations of cells. These aggregations are in some parts rounded or oval, whilst in others they occupy sinuous channels of extremely irregular outline, which, from the sharpness of their margins, look as if they had been hollowed out of the stroma. Each of the opaque-white nodules described above, as seen by the naked eye, consists of a similar arrangement of fibrous and cellular structures enclosed in a distinct capsule of white fibrous tissue. (See Plate XI. Fig. 5.)

The cells are rounded, oval, or polygonal, contain for the most part a single nucleus, and measure from $\frac{1}{2000}$ to $\frac{1}{2500}$ inch in diameter. In general appearance and character they closely resemble glandular epithelial cells; but in no part have they any arrangement similar to that seen in normal or pathological gland-formations (Plate XI. Fig. 6.).

Many of the masses of clear interstitial substance are cylindrical; and in these the axes appear to be occupied by refractive granules, the nature of which could not be determined, although their appearance is very characteristic.

This tumour presents such marked peculiarities of structure as to render it a very difficult matter to establish its precise position in any classification. It would appear to belong to the class of tumours which are designated by Virchow * as the "fibromas of the skin and subcutaneous tissue," in which the author also includes elephantiasis, molluscum, and papilloma; his description of the microscopical characters, however, is not sufficiently precise to enable us to determine satisfactorily the exact relation of this growth to the other members of the group. *19th May*, 1868.

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16. *Tumour resembling epithelioma of the temple.*

The subject of this disease is an old man, aged 69, thin and cachectic, who came to me at the Great Northern Hospital, suffering from slight bronchitis.

He has on the left temporal region a disk-shaped ulcerating tumour of long standing. It is about three inches in diameter, of unequal thickness, raised from a quarter to half an inch above the level of the skin, firmly rooted, and but slightly moveable.

It has a well-defined perpendicular margin, covered with healthy skin; the free border is somewhat rounded and rendered thick and hard by the concretion of blood and other discharges from the surface.

The surface is very uneven, and is formed by bright-red fungous granulations, bathed in a purulent discharge and bleeding freely when the patient coughs or makes any muscular exertion.

The surrounding skin is healthy and merely exhibits an increased afflux of blood.

There is very slight enlargement and induration of the left submaxillary gland, and the superficial cervical glands on the left side are more readily felt than on the opposite side, but can scarcely be said to be enlarged.

As to the duration of the disease, the patient at first stated that he had had it for five years; but subsequently, on being more carefully

* *Die Krankhaften Geschwülste*, vol. i., page 350.

examined, he recollected that about eight years ago he first noticed a small pimple on the left temple, which gave him no pain or uneasiness, and which slowly enlarged for three or four years without ulceration or discharge. At the end of that time, that is, four or five years ago, it began to ulcerate and assume something of its present appearance.

That it has been of slow growth is proved by the fact that during the last twelve months it has merely advanced a few lines nearer to the ear.

Excepting occasional attacks of gout, he has enjoyed good health, and regularly worked at his business as a tailor till last Christmas.

There is no family history of cancer.

It seems to me that this is a case in which, from the large extent of local disease and its long persistence, without any decided extension to the lymphatic glands, a doubt may easily arise as to the correctness of the view which the appearance of the tumour and the age of the patient naturally suggest—of its being a case of true epithelioma.

The diagnosis will perhaps be cleared up by the future history.

Dr. H. H. Crucknell, 19*th May*, 1868.

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17. *Case of recurrent (?) adeno-cystic tumour of the breast.*

E. R., aged 30, a very healthy-looking married woman, came under my care at the Middlesex Hospital.

She has a pendulous tumour of the left breast, as large as a small cocoa-nut, nodulated, but of tolerably uniform density. The skin is stretched over it, but is nowhere adherent. There is a depression at the seat of the nipple. The lower margin reaches to a level of an inch and a half above the umbilicus. The pedicle is as broad as the tumour itself, and seems to consist of breast-tissue spread out beneath the skin. There is little pain in it when handled; but she has at times severe shooting pains.

The history is that eight years ago a tumour of the size of an egg was removed from the breast by the late Mr. P. Price. It had been growing for three months, and was the seat of shooting pains. A year after the operation, she noticed that the tumour was growing again. It continued to increase steadily and slowly till within the last few months, when the growth has been rapid and the shooting pain more frequent and severe.

It, with the whole mammary gland, was removed on the 22nd of April.

The tumour is surrounded by a fibrous envelope. It is composed of several large sub-lobular masses, with here and there small cysts, which contain a yellow, thickish, clear fluid. Its structure is in great part that of adenoid tissue, with a large amount of imperfectly defined fibroid growth.

Mr. C. De Morgan, *19th May*, 1868.

Report by the Committee on Morbid Growths on Mr. De Morgan's tumour of breast.— The microscopic examination of this tumour shows that it consists of a dense web of large bundles of stout fibres of the type of common connective tissue, with finer nuclear fibrillæ, and in some situations rather numerous small round and roundly-oval nuclei about $\frac{1}{1500}''$ in diameter, imbedded in a homogeneous interstitial substance. Scattered at wide intervals through this fibrous tissue are withered mammary tubules. (See Plate XII. Fig. 5.) From the characters of the predominant tissue, we have no hesitation in referring this tumour to the class "fibroma."

31*st May*, 1868.

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18. *Case of cystic encephaloid (?) tumour of the breast, with scirrhus of the opposite breast.*

This case is one of great pathological interest. The tumour was removed more than six years ago, and I now present it to the Society, in the hope that it may be submitted for examination to the Committee on Morbid Growths.

The patient, Sarah P., was a healthy-looking married woman, aged 55. She was admitted into the Middlesex Hospital on the 4th January, 1862. Her father died at the age of 73; her mother was alive at the age of 82; one brother was alive at 60; and she had lost a sister and two brothers from phthisis. There was no history of cancer in the family. She had seven living and healthy children.

Five years before her admission she noticed a small swelling in the left breast. It seems to have altered its character, for she afterwards could not feel it distinctly, though she was conscious of a sense of weight in the breast. A year afterwards a distinct tumour appeared at a somewhat higher level. This has gone on increasing up to the present time, and for four months its growth has been rapid. About

five weeks before admission the skin gave way at the outer part, and there is a circular sprouting vascular growth projecting through the skin, which can be separated from it all round. The diameter of this growth is about three inches. Elsewhere the skin is smooth and freely moveable.

The tumour itself is nodulated and slightly elastic. It measures eleven inches over its surface in its longitudinal, and ten inches in its transverse, diameter. The borders of the tumour can be clearly defined. It is very moveable. The nipple is unretracted. The glands in the axilla are not to be felt.

In the right side is a hard tumour, which commenced a year and a half ago and now occupies the whole of the breast. The nipple is retracted, the skin puckered and adherent, with an ulceration about two inches in diameter above the nipple. In the axilla is a cluster of large hard glands. The patient suffers much from shooting pain in this breast.

The contrast between the two tumours was as marked as possible.

Previous to her admission she had had on two or three occasions severe hæmorrhage from the sprouting growth on the left breast, which had weakened her much. After her admission she had another attack; and as I believed that the tumour was not cancerous, and as the tissues around were sound, and she was herself in good general health, I determined to remove it.

The operation was done on the 8th of January.

The wound healed rapidly. She went out in good condition, and lived for more than two years and a half after, dying at last from the cancerous disease in the opposite breast, no disease having recurred in the side operated on.

The tumour weighed four pounds; it was lobulated, and had a distinct investment of connective tissue. On section it presented a smooth, white, fibroid-looking surface, with abundance of small cysts containing a yellow viscid fluid, and in some of them were small endogenous growths. The largest of the cysts was about the size of a small walnut.

After exposure for a short time the surface assumed a delicate pink colour, and there exuded from it an abundance of thick, creamy-looking fluid, which was enough in quantity to drip from the tumour. This continued for some time, so as to form a layer at the bottom of the jar in which it had been placed.

The juice examined under the microscope was found to contain cells

and nuclei of various forms: round pale cells with bright nuclei, large compound cells, cells with two nuclei, elongated fusiform cells, &c. All those who saw them said that they should have no hesitation in pronouncing them to be the cells from a malignant growth.

A fine section presented also peculiar characters. The structure seemed to be in many parts made up of cells arranged in a linear manner, so as to give an appearance of fibroid growth, but with so little cohesion that at the margins they floated off. In some places the arrangement was similar to that which is seen in adenoid tumours, but still the tissue was made up of the same loosely-connected cells.

Even now—six years since the tumour was placed in carbolic acid—the same creamy fluid exudes on the least pressure. It comes from any part of the surface, and not merely from the small slits which stud it and which mark the situation of many of the smaller cysts.

The mammary gland itself is wasted and spread out towards the lower part of the tumour.

I have never met with a growth possessing similar characters. The fact of the tumour being circumscribed by a distinct investment, of the breast being compressed and flattened by it, of its containing cysts with sprouting endogenous growths, and above all, and the fact of its forming an outgrowth without adhesion to or connection in any way with the surrounding integument, clearly separate it from scirrhous cancer. The microscopical structure leads to the same conclusion. At the same time the structure is unlike that found in cystic sarcoma, or in adenoid tumour, while the characters of the juice are so entirely those of cancer that no one would hesitate to pronounce this to be an exudation from a cancer-growth.

May it be an example of hard encephaloid cancer? In many respects it resembles this somewhat rare form of mammary cancer, which is often encapsuled, and sometimes presents a lobulated and sometimes a cystic arrangement. In such cases too the skin over the tumour might be unadherent, and the gland might be spread out.

But there are certain points of disagreement between this tumour and the encephaloid mammary tumours which have been generally described.

The duration of four, if not five, years of continuous growth is not what we should expect in encephaloid disease. Then the existence of an aperture in the skin through which a fungus had sprouted, but without—in the course of five weeks—any tendency to fusion of the skin with the disease, or to disease of the skin itself, is unlike what

we see in encephaloid. So, too, the uniform colour of the surface of the section, free from blood-effusion in any part, although the disease had existed so long and had burst through its investments. Still more unusual is it to find an encephaloid tumour growing steadily for four years without contamination of the neighbouring glands or other tissues, and showing no tendency to recurrence after removal.

Supposing it to be encephaloid disease, it is, I believe, an unique specimen of this disease in the breast, followed by ordinary scirrhus in the opposite breast, the two diseases then proceeding concurrently, and the patient dying of the scirrhus between two and three years after the removal of the encephaloid.

Mr. C. De Morgan, 19*th May*, 1868.

Report by the Committee on Morbid Growths on Mr. De Morgan's tumour of the female breast.—A thin slice of the tumour exhibits a number of openings, which are no doubt sections of tubes, and a quantity of more or less fibrillated tissue intervening between them. The amount of this tissue, and the degree of fibrillation which it possesses, vary very much in different portions of the tumour. In many places it appears as a finely granular matrix, with but little tendency to the formation of fibre, and in some parts wavy fibres are abundant. In all places, however, cell and nuclear structures are plentiful. These cells are small round or oval bodies, with a few spindle-cells, and are uniformly of the connective-tissue corpuscle type. In those portions of the tumour where the fibrillation is most distinct, there is a tendency to a concentric arrangement round the tubes.

The tubes themselves exhibit the structure of enlarged gland-tubes, and in places there is an accumulation of epithelium within them. (See Plate XII., Fig. 6.)

From an anatomical point of view, therefore, the tumour is a sarcoma —one of the small-cell kind—but characterized by being a growth infiltrated throughout the substance of the breast.

The preparation has been much altered by preservation for six years in spirits; the juice spoken of in the description of the case, although still abundant, is much less copious, and the cells contained in it are chiefly shrivelled and altered epithelial cells. There are some few larger cells which are filled with coarse granules. The Report of the Committee is therefore chiefly confined to the more solid portions of the tumour.

31*st May*, 1868.

19. *Gelatinous or colloid tumour of the mamma.*

The patient was a lady, aged 46, married, but with no children, weakly, and rather fat, *i. e.*, having the whole form rounded and full, such as would receive the commendation of a painter who does not go quite so far as Rubens. The skin was white and very translucent. Her father died of phthisis. For a year and a half she had had pain, sometimes of a stabbing character, in the left breast. For one year she had felt a lump there. When sent to me by Dr. Stewart, of South Bank, Regent's Park, on March 10th, 1868, I found the nipple drawn in, and its areolar edge bulging out together with some of the neighbouring skin, and there was a doughy feeling circumscribed by a harder sensation, much simulating a cyst with thickened walls. There was no enlargement of any neighbouring gland, so that my duty was clear. I advised an operation at once, to which Dr. Stewart acceded, and it was done under chloroform on the 19th of March. Having cut wide of the tumour and removed it, I found the neighbouring fat, which was abundant, peculiarly oily and friable; and therefore, as a precautionary measure, I removed a further large portion of the soft fatty tissue surrounding the tumour. There was some venous hæmorrhage the next day, which was checked by the introduction of lint soaked in a solution of iron, and the healing process went on very favourably. The patient is now quite well.

Upon cutting through the tumour, the centre was found to be filled with gelatinous matter enclosed in numerous fine delicate transparent cysts, occupying a space which would about hold a plover's egg. Surrounding this was some dense tissue, the remains of the mammary gland, and beyond that the very soft oily fat, which was also much more vascular than usual. Under the microscope the gelatinous portion exhibited chiefly granular masses, some non-nucleated fibres, and oil-globules. In the denser tissue, cells of many irregular forms might be seen filled with large transparent cellules, some also having dark-coloured granular masses in them. There were also fibres, and especially masses of beautiful transparent cysts resembling a cluster of grapes, but having no nuclei. They probably contained only the gelatinous matter which is the peculiar characteristic of this form of disease.

Very few cases of colloid affecting the breast are recorded. In the *Transactions* of this Society, which range over twenty-two years, I find only six similar cases.

There is a specimen of colloid, or, as I prefer to call it, gelatiniform tumour, evolved within a pre-existing nidus of scirrhus, in the University College Museum, and Müller, Wedl, Velpeau, and Kölliker each refer to an individual case.

Some have doubted the cancerous nature of this peculiar deposit; but seeing that it is intimately associated with abnormal cells, which are generally recognized as indicative of the irrepressive growth of cancer, I think we must perforce accept this change of structure as but one of the varied forms which are generalized under the term malignant. Mr. Weeden Cooke, 19*th May*, 1868.

Report by the Committee on Morbid Growths on Mr. Weeden Cooke's case of "gelatinous tumour of the mamma."—The specimen was an oval-shaped mass, three and a half by two and a quarter inches, its external surfaces formed by adipose tissue, and on one side a piece of skin including the nipple. On section, the interior consisted of a soft, translucent gelatiniform material, which extended right up to the under surface of the cutis, whilst on the other sides it was bounded by adipose tissue. This gelatiniform matter was enclosed in loculi, some of them three-fourths of an inch in diameter, and was not uniform in character throughout, for the contents of some of the loculi were of firmer consistence and of a brownish-white colour, varying much in degrees of transparency, some being perfectly opaque. Minute opaque spots were also scattered through even the most transparent portions.

Under the microscope the appearance presented was that of a gelatinous mass pervaded in all directions by a granular, finely-fibrillated, many-branched stroma; the branches freely anastomosing, and here and there thickly studded with minute oil-globules. The trabeculæ of this stroma were of various sizes, some visible to the naked eye, others extremely minute.

The more opaque portions of the tumour consisted of masses of material resembling that of the trabeculæ of the stroma, very friable, breaking up very readily under the pressure of a thin glass cover, and here and there, in consequence, offering a cellular appearance; they contained a large number of granules and oil-globules. We were unable to determine the exact nature of these bodies, whether they ought to be regarded as cells in a state of degeneration, or as portions of the stroma. 31*st May*, 1868.

20. *Fibrous tumour of the mamma.*

Mary G., aged 16, admitted into the Cancer Hospital, on February 3rd, 1868, under my care, has a tumour connected with the left mamma, and extending from it towards the centre of the sternum. It began about two years previously, soon after an accidental blow. No history of cancer or phthisis in her family. General health good. I removed the tumour, which proved to be quite independent of the neighbouring mammary gland, on the 5th of February, and the healing was very satisfactory.

Upon examination, the tumour was seen to be thoroughly enclosed in an investing capsule, and a section showed a fibrous aspect, which the microscope confirmed.

These fibrous tumours may generally be traced to some injury which gives rise to hæmorrhagic effusion; and they would appear to result from the organization of that effusion, which, after the manner of independent growths, generally increases endogenously. The position of this tumour is one not often recorded. There seems to be no reason why there should be any recurrence.

Mr. Weeden Cooke, 19*th May*, 1868.

Report by the Committee on Morbid Growths on Mr. Weeden Cooke's case of fibrous tumour of the mamma.—It is an ovoid tumour enclosed in a fibrous capsule, to which a few portions of adipose tissue are loosely adherent, and which measures about four inches and a half, by two and a half.

On section, its structure is dense, of creamy-white colour, almost uniform, being marked only by a few faint lines of a less dead-white colour, and here and there by septa of loose cellular tissue. On lightly scraping the surface of a fresh section no definite forms are obtained. A thin section under the microscope is found to consist of pale, delicate fibres, slightly wavy, their mean diameter about $\frac{1}{6000}$ of an inch; on some few of the larger ones there are dilatations, in which nuclei are seen. The fibres in some parts of the tumour are grouped in fasciculi, but present no definite arrangement. At some points can be seen round spaces with an imperfect epithelial lining—apparently the remains of gland-structure. 31*st May*, 1868.

IX. DISEASES, &c., OF THE DUCTLESS GLANDS.

A.—SPLEEN.

1. *Deposits in the spleen and liver, with enlarged lymphatic glands.*

E. O., a youth of 18, was admitted into St. Mary's Hospital, under the care of Dr. Sibson, on January 3rd, 1868, having been previously treated as an out-patient. He was an extremely delicate youth, who was said always to have been of weak constitution, and had suffered for three months from dull aching pain in the lower part of the abdomen. At the time of admission he complained of pain, increased by pressure, in the hypogastric and both iliac regions, and of shooting pains down the back of the legs. A tumour was felt, on examination, in the left iliac region, extending from the anterior superior iliac process to the middle line, and for about two inches upwards from Poupart's ligament. This tumour was not itself the seat of pain. In the course of the disease, the left leg became swollen from the hip to the toes, the skin and conjunctivæ became strikingly jaundiced, and a systolic murmur was heard at the apex of the heart. On one occasion there was copious epistaxis. The pain, after a short intermission, returned with increased severity, the patient became extremely weak, and, lapsing into a comatose condition, died on February 19th, seven weeks after admission.

Post-mortem examination.—The body was extremely emaciated, and the skin very yellow. The thoracic organs were healthy; the heart contained imperfectly coagulated blood on both sides. The *liver* presented a few small yellow tumours, not larger than a hempseed, on its upper surface, immediately under the capsule. There were a few similar masses scattered through the substance of the liver, and in the lobulus Spigelii was one somewhat larger than a pea. A mass of enlarged lymphatic glands was attached to the under surface of the organ, and pressed directly on the bile-duct. The *spleen* was large and hard. On its surface were seen several yellow projecting masses, varying from one-eighth of an inch to three-fourths of an inch in diameter. On section, the substance of the organ was seen to be mottled with white masses, which, though soft, were not crumbling. The largest, corresponding to the projections on the surface, were situated at the periphery, and were irregularly conical in shape. Those further from the surface were smaller and round. Attached to the hilus was a mass of enlarged lymphatic glands. The

pancreas appeared healthy, but had attached to it a mass of glands similar to those connected with the liver and spleen. The *kidneys* were rather large and pale, and had a somewhat waxy translucent appearance. No reaction was obtained with iodine; and on microscopical examination the tissue appeared healthy.

The abdomen further contained a tumour, consisting of enlarged and adherent lymphatic glands, and which, situated partly on the left side, partly in the middle line, reached from the left inguinal region almost to the pancreas, being everywhere behind the peritoneum. The largest mass, which was situated in the groin, was globular and about two inches in diameter. This was connected behind and above with a mass of enlarged glands, surrounding the external iliac and common iliac artery and vein of the left side. Passing upwards, the mass surrounded in like manner the aorta and inferior vena cava, ending somewhat abruptly about the level of the upper extremity of the kidneys, though attached to the groups of glands described in connection with the liver, pancreas, and spleen. The substance of these glands was firm and elastic; of a yellowish colour and somewhat translucent, and though not hard, very tough. The large gland in the groin presented one patch of softening and caseous degeneration; but this was not seen elsewhere.

The right inguinal glands were not enlarged, nor was any other group of glands throughout the body. The blood was not examined.

Microscopical appearances.—The minute structure of the glands was by no means uniform. In the smaller, which might be assumed to be in an earlier stage of development, the yellow substance of the gland was evidently divided by white fibrous partitions. In fine sections the yellow mass was seen to correspond precisely to the follicles of the cortical portion, and to the lymphatic spaces throughout the gland. These portions were mainly occupied by cell-like masses of very irregular form and dark granular contents. The cell-wall was not distinct, and a nucleus could be seen only with difficulty. They were mostly three or four times the diameter of a lymph-corpuscle, but some were decidedly larger. The larger forms contained in some cases many nuclei, and had a certain resemblance to the large disks of myeloid tumours. They resembled, in the main, the cells described and figured by Dr. John Ogle from a similar case (*Pathological Society's Transactions*, vol. xi., p. 247). The white septa separating these masses were evidently the normal septa of the gland, but much thickened and closely studded with nuclei, being apparently

in a condition of rapid increase. From these septa, smaller nucleated fibrous partitions traversed in all directions the groups of cells. In larger glands, and those in a more advanced stage of the disease, the general type of structure was the same, but the irregular cells were smaller, and the fibro-nucleated tissue predominated, the septa not being clearly distinguishable from the follicles of the gland. In some of the largest glands the structure was made out with difficulty, and seemed to be obscured by the presence of some amorphous material. The one softened patch in the largest gland presented granular matter, fat, and cells in a state of fatty degeneration. The white masses in the spleen contained none of the large elements spoken of above. They were composed mainly of round cells resembling lymph-cells, of spindle-shaped cells, and what appeared to be free nuclei. Almost the same was true of the minute tumours in the liver, where the smallest masses discoverable consisted of nothing but spindle-shaped cells, and apparently free nuclei.

Remarks.—This case is evidently one of that class first described by Dr. Hodgkin, and to which Dr. Wilks has applied the name of Hodgkin's disease. Professor Virchow has described such tumours under the name of lympho-sarcoma. They have also been termed by German pathologists "leukæmic tumours;" but Professor Virchow has shown that, in the cases most nearly resembling that here described, enlargement of the glands is not accompanied by leukæmia. It is unfortunate that in this case the blood was not examined. The accounts given by Dr. John Ogle, Dr. Wilks, and others, of the minute anatomy of these tumours differ so much, that it is satisfactory to find in one case three kinds of morbid products already observed in different cases, viz., peculiar polymorphous cells, fibro-nucleated tissue, and an amorphous, perhaps albuminous material. (The latter, it may be remarked, gave no distinctive coloration with iodine.) It would seem that the two latter represent more advanced stages of the morbid process than the former. The occurrence of caseous degeneration at one point shows an analogy, hardly otherwise perceptible, with scrofulous disease.

The resemblance of the polymorphous cells above described to epithelial forms has been recognized by Professor Virchow,* who describes similar structures as occurring in the early stages of tuber-

* *Die Krankhaften Geschwülste.* Band ii., s. 640 und 732.

culosis of the lymphatic glands, and in what he calls the large-celled forms of lympho-sarcoma. Mr. J. F. Payne, *17th March*, 1868.

B.—SUPRA-RENAL CAPSULES.

2. *Addison's disease of the supra renal capsules.*

J. D., aged 43, park-keeper, was first admitted an out-patient at the Middlesex Hospital under my care on the 17th of November, 1865.

About seven years before, the patient had suffered from repeated attacks of ague, extending over a period of three years; but, with this exception, his health had been good until within a few months of his coming under observation. During this latter period he had suffered much from pain in the loins, especially on the right side, and also from pain in the epigastrium and left hypochondrium. He complained moreover of vertigo and of anorexia, retching and vomiting.

On admission he had a strikingly languid, exhausted aspect, his pulse was extremely feeble, he was short of breath on exertion, and was obviously exceedingly ill. The area of splenic dulness was somewhat larger than natural, probably in consequence of his former attacks of ague. The urine was perfectly normal. There was no emaciation, nor any apparent cause to account for the extreme asthenia from which he was suffering. He had, indeed, a troublesome catarrhal cough; but this had only recently supervened, and there was no physical evidence of any pulmonary disease. On examination of the surface of the body, the face, back of neck, hands, and forearms were found to be slightly dusky. The site of a small blister, which had been applied over the epigastrium three months previously, was deeply discoloured; and, on the skin covering the left clavicle there was a yellowish-brown stain about an inch in length, evidently corresponding to the cicatrix of some slight wound. With these exceptions the skin was fair and free from discolouration; but the buccal mucous membrane presented several brown stains in places which had apparently been irritated by the teeth. The hair was of a sandy colour, and the beard and whiskers light brown.

The patient continued under treatment for nearly two years, living in Camden Town, where he was kindly attended from time to time by Mr. Blackstone, Jun. During this period he had many attacks of excessive prostration, accompanied by sickness and by pain in the

epigastrium and left hypochondrium, with gasping, sighing respiration. These attacks were often referable to some over-exertion, but sometimes came on without any discoverable cause. Repeated examination throughout his illness failed to ascertain any pulmonary lesion beyond slight and transient attacks of bronchitis. The heart's impulse was always very feeble, but the sounds remained perfectly clear and free from murmur.

On the 9th of last September I found that he was sinking rapidly, and therefore took him into the hospital, where he died on the 17th of the same month. During the interval which had elapsed between his first presenting himself at the hospital and his final admission into it, the discolouration of skin had become much more marked, his hair had acquired a dark-brown hue, and his whiskers had become black. The stain in the cicatrix over the clavicle had also become deeper; but that over the site of the blister had gradually faded and could scarcely be distinguished at the time of death. Meantime a streak of discolouration had appeared on either lip, as well as some dark patches on the gums and two distinct inky-looking stains on the tongue. Many small specks like black freckles had also made their appearance on his face, neck, hands, and trunk. He became delirious the night before his death, which took place after several days of exhausting sickness. During the last few hours of life he lay apparently unconscious, with his thighs drawn up, his arms crossed over his chest, and his fists clenched. Both the upper and lower extremities strongly resisted extension. The abdominal muscles were rigid, as were also the masseters, and the mouth was firmly closed. Whenever he was touched, convulsive twitchings ensued, either of the face only, or of the whole body.

Post-mortem examination.—A considerable layer of yellow fat was found in the abdominal parietes. The muscles were well nourished, and of a healthy red colour. The brain was found to be slightly congested, and its substance rather soft. The lungs were everywhere adherent to the ribs and somewhat congested, but free from tubercle. The only other signs of disease in those organs were some dilated and thickened bronchial tubes in the upper lobes, containing puriform and putty-like matter. The heart was small, weighing only seven and a half ounces, and its muscular tissue was rather pale-coloured. Both the mitral and tricuspid valves were much thickened at their edges; the chordæ tendineæ were also much thicker than natural. The aortic and pulmonary valves were normal. The liver was small but

healthy. The spleen was large, weighing ten and a half ounces, but in no other respect abnormal. The kidneys were slightly congested, but perfectly healthy. The dorsal and lumbar vertebræ were carefully examined, to ascertain whether there were any spinal cause for the persistent pain which the man had experienced in the loins, but they were found to be healthy.

The supra-renal capsules were of about normal size and shape, but were slightly thickened. They were hard and nodulated, and on section were seen to have wholly lost their normal appearance, the natural tissue being replaced by an almost calcareous yellow substance, imbedded in a yellowish-white semi-transparent matrix. Sections of the capsules examined under the microscope presented the appearances characteristic of Addison's disease.

Dr. Greenhow, 15*th October*, 1867.

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3. *Case of Addison's disease of the supra-renal capsules without any bronzing of the skin.*

Ellen J., aged 19, a servant, was admitted into the Middlesex Hospital under my care, on May 25th, 1867. She had no brothers or sisters, her father having died at the age of 28, of what, she could not say. Her mother was alive, aged 43. Ellen J. had suffered from a hacking cough ever since she had been a child; but about Christmas, 1866, this became much worse and was accompanied by vomiting and great pain in the chest and between the shoulders. The vomiting soon became very urgent, and for it she was a patient in the North London Consumption Hospital from March 12th to May 13th. Since May 13th she had only vomited once, but she had suffered much from debility, giddiness, dyspnœa, and frequent cough. She had never had hæmoptysis or night-sweats.

On admission, she was moderately emaciated, pale, and anæmic, with both cheeks slightly flushed. She was of fair complexion, without the slightest bronzing of the skin or darkening of the areolæ of the nipples. The pulse was 108, feeble, and regular. She had a troublesome cough, and expectorated large round pellets of opaque, yellow mucus. Over both clavicles there was dulness on percussion, and below the clavicles there was flattening, but the percussion-sound was clear, and, although the respiratory murmur was slightly harsh and the vocal resonance increased, there was no prolongation of the expira-

tion, friction, or crepitation. Over the chest, generally, but chiefly at the upper part, were a few dry bronchial râles. The heart-sounds were normal. The tongue was unusually clean and red; the appetite was indifferent, but there was no vomiting, pain, or swelling in the abdomen, and no albumen in the urine.

On the day after admission, she had frequent vomiting, and between eight and nine in the morning of May 27th she had a fit of general convulsions, commencing with a shrill scream, lasting for several minutes, and followed by a state of complete insensibility for two hours. At two P.M. she was still heavy and stupid, and had frequent vomiting, and an enema of oil which had been administered was retained. After this she became very restless, and continued to vomit frequently. She rapidly became weaker, and died at three P.M. on May 28th.

Autopsy.—The right lung was firmly adherent at the apex, and also at different parts of its surface. Both lungs were puckered, cicatrized, and condensed at their apices over a space the size of a walnut, but the pulmonary tissue elsewhere appeared normal, and there was nowhere any sign of recent tubercle. Each lung weighed only eleven ounces. The bronchial glands were enlarged, and contained much black pigment, but no cheesy deposit. Heart very small (four ounces and a half), but healthy. The brain weighed forty-one ounces and a quarter; it was anæmic, but in other respects healthy. The cerebral membranes were slightly injected, but there was no trace of tubercle, and no increase of fluid in the ventricles. No peritonitis, or ulceration of the stomach or intestines. Mesenteric glands enlarged to about the size of filberts, firm, and without any cheesy deposit. Liver in a state of simple atrophy, weighing only twenty-seven ounces and three quarters. Kidneys small and anæmic, but otherwise healthy. Both supra-renal capsules enlarged to three or four times the normal size, very hard, and on section presenting firm, grey, translucent tissue, with interspersed masses of soft, opaque-yellow material, containing here and there calcareous deposit.

The hair of the head was light brown, but that on the labia was perfectly white. In the mucous membrane of one cheek Dr. Cayley found a dark-purple stain of about the size of a sixpence.

Remarks.—Anatomically there could be no doubt that this was a genuine example of Addison's disease of the supra-renal capsule; and the remarkable feature of the case was the absence of any bronzed

colour of the skin, in consequence of which the real nature of the case was not diagnosed during life. The other clinical characters, however, of Addison's disease were present, viz., great anæmia and debility, frequent vomiting, pain in the back, and a tubercular history. Cases of typical Addison's disease of the supra-renal capsules without any bronzing of the skin have been already recorded in the *Transactions*;* and in several of the cases collected by Dr. Greenhow in the seventeenth volume death was preceded, as in the case now related, by convulsions. Dr. Murchison, *15th October*, 1867.

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4. *Bronzing of the skin, suspected during life to be the result of disease of the supra-renal capsules.*

Mr. E. S., aged 47, has been off and on under my care at Westminster Hospital for the last eighteen months, suffering from extreme prostration and general debility. He was so weak that at times he could scarcely crawl along, and usually he had to be accommodated with a seat on his visit to the hospital. He had great difficulty in going upstairs, from his general weakness. About two years ago his face and neck became discoloured; this was especially noticeable on the cheeks, behind and below the ears, and on the exposed parts of the neck. The colour was a pale, greenish-brown, or true bronze, and had attracted the notice of his friends and neighbours. Sometimes it had been observed by passers-by in the streets, and he had been pointed at as a foreigner. He had never been abroad, although he had travelled over Britain, as a commercial agent. He felt at times chilly and cold, and as no disease of any internal organ could be detected on repeated careful examination, he was treated with quinine, under the supposition that there might be some malarious influence at work, but without any benefit. Tonics and other remedies were ordered from time to time, but no improvement resulted in the general symptoms of prostration. Without any positive expression on the point, I have clinically remarked to the pupils of the hospital, that, failing to discover any well-assigned cause for the debility manifested in this patient, I suspected it might depend upon some disease of the supra-renal capsules, particularly as there was a distinct bronzing of some part of the body to favour such a view, which time alone would clear up. During the past summer, cough set in at night, with emaciation,

* See Dr. Greenhow, *Path. Trans.*, vol. xvii., p. 322, and Mr. A. Bruce, *ib.*, vol. xvii., p. 401.

and afterwards expectoration. Disease of the left lung now became apparent from well-marked physical signs. He was put upon suitable treatment, and for a time went to Margate, but returned to London without being in the least benefited, in the early part of October. He subsequently became more and more exhausted, and died on November 4th, 1867, in the evening.

I made a *post-mortem* examination at his residence in the Kennington Road, on the 6th, assisted by some of the hospital pupils. The following appearances were observed :—

Chest.—Right lung healthy, but partly bound down posteriorly by old pleuritic adhesions. Upper lobe of left lung solid from recent deposit of tubercle, without any cavities ; pleuritic adhesions present on the left side, where a circumscribed effusion of bloody serum existed to the extent of half a pint. The heart was normal ; the semilunar valves of the aorta were affected with hard, bony deposits, impairing their action, but without incompetency.

Abdomen.—All the viscera perfectly healthy, and rather laden with fat. The right supra-renal capsule was normal in shape, very friable, and tore in two on its removal. It had lost its bright-brown colour in the interior. The left capsule had degenerated into a solid body, *one-fourth the size of the right*, was oblong and hard, an inch and a-half long, and half an inch wide. It was solid, possessed no cavity internally, and on section across its middle possessed a light-brown colour.

It would appear to me that the left supra-renal capsule is markedly affected on contrasting it with the right ; but this can be determined only by careful examination of a competent Committee appointed by the Society. Whether it may be found healthy or otherwise, the bronzing of the skin and extreme prostration cannot be a mere coincidence. Sir Duncan Gibb, 3*rd December*, 1867.

Report on the supra-renal capsules exhibited by Sir Duncan Gibb.—We have examined the supra-renal capsules exhibited by Sir D. Gibb at the last meeting of the Pathological Society, and referred to us for examination. We find them to be normal. They present no traces of the deposit characteristic of Addison's disease. It would appear that the patient died of phthisis, complicated with disease of the aortic valves, and we may add, that some amount of discolouration of skin is not uncommon in many chronic affections.

Dr. Wilks,
Dr. Greenhow, 17*th December*, 1867.

5. *Case of Addison's disease of the supra renal capsules.*

William A., aged 16, engaged at a druggist's, was admitted into St. Thomas's Hospital under my care on the 30th September, 1867. He stated that he had enjoyed perfectly good health up to the previous Christmas, and that he then fell accidentally through a trap-door and injured the lower part of his back. He injured himself, however, so slightly that he continued at his work as usual. To this accident he attributed his present illness. It seems that pain in the sacral region came on about three weeks after the accident, and has continued, off and on, though never very severely, ever since. Somewhere about this time a change began to be observed in the colour of his skin, not only by his relatives and friends, but also by himself. From that time until his admission into the hospital his skin had been progressively getting darker and he had been suffering from various other indications of ill health, which had also gradually increased. He had been getting weaker and weaker, had had to give up work very shortly after the commencement of his illness, and had for the most part kept his bed ever since; he had suffered from frequent headaches, with attacks of nausea and sickness. His appetite had, however, been pretty good all along, and his bowels regular; he had had no cough or night-sweats, and he had not lost flesh very decidedly.

On admission he presented a general very dark-brown hue, not patchy, but varying in depth and in some degree in tint in different parts. On the face the discolouration had a tinge of yellow; on the loins and buttocks (where the colour was deepest) the skin closely resembled that of a negro. A few slight scars, or marks resembling scars, were themselves paler than the surrounding skin, and presented very dark margins. He complained of some pain and tenderness in the sacral region, but there was no distinct point in which tenderness existed, and no swelling. He was manifestly very weak, and was particularly weak upon his legs, but there was no paralysis. His tongue was clean, and his bowels regular. There was no evidence whatever of heart, lung, liver, or renal disease. Pulse 96. He was thin, but far from emaciated.

On the day of admission he caught a slight cold, and for two or three days afterwards he had a little sore throat and cough, with some wheezing at the chest.

He remained under medical treatment in the hospital until the 19th of March, 1868, when, being apparently in quite as good health as he was on admission, he was transferred to the Convalescent Hospital at Walton.

During his residence in St. Thomas's Hospital his symptoms were very much as they were stated to have been before admission. He was extremely weak, complaining especially of weakness in his legs, and being rarely able to remain up for more than a few hours a day; sometimes, however, seeming to regain a certain amount of strength for several days together; and every now and then keeping his bed entirely for a week or more. His sickness continued, but varied greatly; sometimes he was for days, and even for two or three weeks, without any feeling of nausea; at other times he suffered from attacks of sickness every day, or every day or two, and occasionally he had severe attacks lasting for several days together. The severe attacks were always associated with great occipital headache; and indeed some degrees of headache attended all his attacks of nausea and vomiting. His tongue was always perfectly clean; his appetite generally good (even when he was suffering from sickness); his bowels for the most part regular, and his urine normal in quantity and quality; his pulse always very small and weak, and varying between 80 and 100 in the minute. Since the slight attack of bronchitis on admission, he at no time had cough or other indications of pulmonary disease. The heart's sounds were quite normal.

On several occasions he had attacks in which his life was despaired of. During these he complained of severe occipital headache, great nausea and some sickness, extreme depression, both mental and bodily, with coldness of surface (especially of the hands and feet), and lividity of the nose. He complained also at these times of a sense of coldness, of a feeling of inability to move his legs (but without paralysis), and once or twice of pains in the thighs and calves. His pulse, too, was quicker than at other times, and scarcely perceptible. These attacks appeared to be relieved by brandy and diffusible stimulants.

He had a slight attack of this kind immediately after admission, lasting for a few days. A very severe attack came on in the beginning of November, and lasted for about a week. He had a short though severe attack about the 13th of November, and another in the beginning of December; and towards the close of December he was for about a week very prostrate and confined to his bed, though he was not then suffering severely from either pain or nausea. About the 17th

of January he complained of some return of headache without sickness. On the 9th of February he had violent retching for a few hours, and again for two or three days early in March he was suffering pretty severely from all the symptoms above enumerated.

It may be added that early in December he had a sharp attack of diarrhœa, which lasted a day or two only; and that late in October, and again towards the latter end of January, he suffered from severe pain in micturition. Occasionally he was unable to pass water in the recumbent position.

The colour of his skin increased but little in depth while in the hospital; it was thought by the sister of the ward and by others that it varied (in the face at least) occasionally. This is a point, however, in regard to which I never entirely satisfied myself. In order, however, to see whether the colour was modified by excess or deficiency of blood in the capillaries of the skin, one or two spots were treated with Richardson's ether spray. The final result was curious: the epidermis over each frozen patch gradually detaching itself from that around, contracted itself into a kind of black corrugated button, which still adhered to the central part of the patch several weeks after the freezing process - up to the time of death, in fact,—leaving a broad white ring around it, corresponding to the newly-formed epidermis. There were observed a few small, and not very distinct, brownish patches on the buccal mucous membrane.

While in the hospital he increased considerably in height, but unfortunately the increase was never measured. He was weighed at frequent intervals, and found to vary within narrow limits only. His weight a month after admission was six stones ten pounds; at the end of November it was six stones eight pounds; and it was never less than this. About the end of February he weighed six stones thirteen pounds and a quarter. Actually, therefore, his weight would seem to have increased while he was in the hospital, but doubtless relatively to his height there was some slight diminution. I need scarcely say that there was no change obvious to the eye, and I may repeat that he never had an emaciated appearance.

His temperature was occasionally tested, and was found to vary in the axilla between 97·4° and 98°. His pulse was remarkably small and feeble at all times.

His urine was examined both chemically and microscopically. It presented no crystalline matter or other microscopic element, even at the times when he had pain in passing it; it contained no albumen,

and Dr. Bernays reported that he detected nothing unhealthy in it. It was, however, at times very pale, copious, and of low specific gravity.

He was treated medically up to the 13th November with iron and vegetable bitters; but from that date onwards he took every four hours the following draught: Ammon. sesquicarb. gr. iii, spt. chloroformi ℥xx, tinct. opii ℥v, aq. cinnamomi, ℥i. This was given to him first during an attack of headache and sickness, and as he seemed to derive benefit from it, it was continued. In addition to an ordinary diet, comprising meat and pudding, the details of which were varied from time to time, he had during the greater part of the time he was under treatment a glass of wine daily, and a couple of eggs, and from the beginning of January an extra supply of bread as well. He enjoyed, in fact, a good appetite, and had abundance of food.

On the 19th March he was sent to Walton. The weather on that day, and for some days subsequently, was cold and inclement. The journey there seems to have fatigued him very much, and he was seized immediately on reaching Walton, if not on his way there, with all those symptoms of depression, sickness, &c., which have been previously described. These symptoms continued without intermission; and as, after remaining there five days, there was no sign of improvement, he was sent back again to St. Thomas's Hospital. He was readmitted on the 24th.

He was then miserably depressed, excessively weak, with an imperceptible pulse at the wrist, congested nose, and cold extremities, suffering from frequent sickness, with inability to take food and severe pain in the head and back. He was, however, perfectly sensible, and his tongue was, as it had been almost invariably, quite clean and moist. For a day or two he appeared to rally slightly; but on the 26th all his unfavourable symptoms became aggravated; hiccup came on; he passed a very restless night, sank gradually, and died quietly at ten on the following morning (27th).

Post-mortem examination.—Head.—Brain and its membranes healthy.

Chest.—Lungs crepitant throughout, but somewhat congested and œdematous below. Pleuræ healthy, with the exception of a few old adhesions on the left side. Larynx, trachea, and bronchial tubes healthy. The heart weighed six ounces, but seemed healthy in all respects; there were small, pale, firm coagula in all its cavities.

Abdomen.—Peritoneum healthy. The liver weighed thirty-three ounces, and its vessels contained a good deal of blood. The gall-

bladder was moderately full of greenish ordinary-looking bile. The spleen weighed eight ounces, and was firm and healthy-looking. The kidneys weighed together seven ounces, and were healthy. The urethra and bladder, œsophagus, stomach, intestines, and mesenteric glands were all quite healthy. There was no appearance of disease in connection with the bones of the lower part of the spine or pelvis.

The left supra-renal body was plump and rounded, and evidently somewhat enlarged. It weighed eighty-six grains. On section it was found to present no trace of healthy structure, but consisted of a kind of tough fibroid substance, in which were imbedded lumps of cheese-like tuberculoid matter.

The right supra-renal body had more of the normal shape, but was greatly atrophied, weighing sixteen grains only. It contained, like the other one, a few cheesy lumps, but consisted in great measure of a tough, slightly translucent fibroid substance. This also presented no appearance whatever of healthy structure.

Remarks.—It is needless to dwell on the fact that the case above detailed was in its symptoms and result a typical case of Addison's disease. It is very interesting, however, to observe how the patient (though with excessively feeble vitality, and ready apparently to succumb to the slightest fatigue or unfavourable change of temperature or other adverse circumstance) was by careful dieting, by guarding as far as possible against all bodily fatigue and mental anxiety, maintained at a tolerably uniform level of health during his six months' residence in the hospital. On the whole, his health was better while he was in the hospital than it had been previous to admission; and further, his health was, if anything, better during the last two or three months of his residence in the hospital than it had been during the first two or three months; it was better, however, not because he was stronger or stouter, for in these respects there was little, if any, visible change, but because he suffered less frequently and less severely from sickness and the symptoms associated with sickness. It seemed, indeed, as if, under a continuance of the same kind of treatment, he might have been kept in the hospital for an indefinite period; and I sent him to Walton partly because I did not feel myself justified in retaining him longer in St. Thomas's, partly because I really hoped that he might be benefited by change. I cannot doubt that the fatigue of his journey, in conjunction probably with the effects of cold weather, was the determining cause of the attack which proved fatal.

Dr. J. S. Bristowe, 21*st April*, 1868.

6. *Malignant disease of supra-renal capsules, brain, liver, and kidneys.*

R. M. B., a short-hand writer, aged 62, was admitted into St. Thomas's Hospital under my care on the 7th March, 1868.

It was impossible to get any intelligent answer from him; he said that there was nothing the matter with him, and that he only wanted rest. It appeared, however, that he had been subject to bronchitis for some years; that about seven weeks before admission he had been attacked with epileptic fits; and that there had since been a frequent recurrence of fits—sometimes three or four in a night. He had three fits in the night before admission. There is now marked loss of intelligence and of muscular power; the left arm and left side of the face especially seem paralysed. There is a very broad arcus senilis; and the left pupil is more dilated than the right, but both contract under the influence of light. Pulse 84. Heart's sounds healthy. Chest resonant; respiratory sounds feeble. Urine presents a trace of albumen; specific gravity, 1020. Tongue furred.

13*th*.—No improvement. Has had no fit; hears when spoken to, and tries to answer, but is very stupid; passes everything under him unconsciously.

17*th*.—No fit, and no material change except that the right arm is rather rigidly flexed at the elbow. The left pupil remains more dilated than the right.

The next day he became comatose; and he died on the 19*th*.

Post-mortem examination.—The brain contained several well-defined globular masses of encephaloid cancer. One, the size of a large marble, was situated in the anterior portion of the left corpus striatum. The others (which were somewhat smaller) were situated, one in the posterior extremity of the left hemisphere, one in the same hemisphere a little above and to the left of the last, and one in the posterior part of the right hemisphere. A limited portion of the right hemisphere, at about its centre and above the lateral ventricle, was of a pinkish hue and diffluent in consistence. In other respects the brain was healthy.

There were extensive pleural adhesions. The lungs were congested, and at their margins highly emphysematous. Many of the bronchial glands contained soft cheesy and cretaceous deposits. Pericardium and heart healthy. On opening the abdomen, a large tumour was found occupying the right lumbar region, and pushing the ascending colon before it. This proved to be the right kidney, which was enlarged to the

size of a large orange, and affected extensively with malignant disease. The left kidney was also enlarged, though in a much less degree than the right, and contained numerous roundish masses of encephaloid growth. Both supra-renal capsules were infiltrated with similar material, and had apparently lost all traces of their original structure. The left was about as large as a hen's egg; the right somewhat smaller. Some of the veins of the left supra-renal capsule were occupied by cylinders of cancerous material. A few masses of cancer were found in the liver. All other organs were tolerably healthy.

All the cancerous growths in this case were soft, and more or less pulpy and congested, and yielded creamy juice on pressure. Under the microscope the bulk of the growths was found to consist of large cells of irregular shape, and often more or less branched, containing one, two, or more oval nuclei, with nucleoli.

Remarks.—This case was brought under the notice of the Society, chiefly by way of comparison with the case of William A. (page 410). The latter was a case of well-marked Addison's disease, presenting tuberculoid affection of the supra-renal capsules, deep bronzing of the skin, and the usual serious symptoms characteristic of that disease. In the present case, however, although the supra-renal capsules were apparently totally disorganized, there were never any obvious indications of the symptoms of Addison's disease. It tends to confirm the now prevailing view that mere destruction of the supra-renal bodies is not sufficient to induce characteristic symptoms; and that the collection of symptoms indicating the existence of Addison's disease is associated only with tuberculoid disease of the glands in question.

Dr. J. S. Bristowe, 21*st April*, 1868.

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7. *Cancer of one of the supra-renal capsules without any symptoms of Addison's disease.*

Although the disease in this case appeared to originate in the vertebræ, I show the specimen chiefly as another instance* of destruction of the supra-renal capsule by cancer without any bronzing of the skin. Only one of the capsules was diseased in this case; but even when both are destroyed by cancer there is no bronzing. These

* See cases collected by Dr. Greenhow in the seventeenth volume of the *Transactions*, p. 333, Table B.

cases show that the bronzing of the skin in "Addison's Disease" must be due not so much to the abrogation of the functions of the supra-renal capsules as to the disease from which this results. It will be remembered that at a former meeting during this session, I exhibited a specimen of true Addison's disease of the capsules in which the anæmia and vomiting were unattended by any bronzing of the skin. (See p. 406.)

Alfred T., aged 55, was admitted into the Middlesex Hospital, under my care, on January 28th, 1868. He was very weak and emaciated, and not very clear in his replies. Seventeen years before admission he contracted syphilis, followed by constitutional symptoms, but his "present attack" commenced only three months before admission with severe pain in the spine, accompanied by emaciation and weakness.

His symptoms while under observation were as follows:—Progressive emaciation and debility, and anæmic chlorotic colour of skin; but no jaundice, or bronzing of skin, or discolouration of mucous membrane of mouth, or perspirations. Persistent pain and tenderness on pressure over spinous process of the third and fourth lumbar vertebræ, but no sign of tumour or of paraplegia, excepting retention of urine for the last two or three weeks of life. Tongue dry, red, and fissured; no vomiting; constipation alternating with diarrhœa. Abdomen distended and tympanitic, with slight tenderness on deep pressure to the left of the umbilicus: a few days before death the abdominal swelling subsided, and the aorta could be felt passing down along the spine, but there was no appreciable tumour. The hepatic dulness measured four inches in the right mammary line: at no time was there tenderness, or a feeling of nodulation in the region of the liver, or ascites. The pulse varied from 84 to 120, and was always small and weak; the cardiac dulness was diminished; there was at no time any cough or expectoration; and at the time of admission no notable sign of mischief could be discovered in the lungs. The urine was alkaline and contained phosphates, but no albumen or bile-pigment. The temperature was either normal, or but slightly increased. Throughout, the mind was confused, and there was a tendency to low muttering delirium; this increased towards death, which occurred on March 22nd.

Autopsy.—There was a soft cancerous tumour of the bodies of the third and fourth lumbar vertebræ, projecting about half an inch from the surface, chiefly on the left side, where it invaded the texture of the

psoas muscle, and encroaching about half-way to the spinal canal, which, as well as the spinous processes, appeared normal. There was cancerous enlargement of the lumbar and bronchial glands, and a mass of soft cancer, the size of a large walnut, compressing a large branch of the pulmonary artery in the upper part of the lower lobe of the right lung. The liver was not enlarged, and its lower margin did not project beyond the edge of the ribs, but it contained from a dozen to twenty isolated cancerous nodules, from the size of a pea to that of a walnut, several of which were excavated in the centre. One of these nodules was in a portion of liver which was firmly adherent to the right supra-renal capsule. The latter organ was greatly enlarged, and converted into a mass of hard cancer, measuring two and a half inches in diameter. The left capsule, the kidneys, and the brain presented nothing abnormal. Dr. Murchison, 21*st April*, 1868.

8. *Cancer of one supra-renal capsule without bronzing of skin.*

The patient (a man aged 47) from whose body this specimen was taken was in the Middlesex Hospital under Mr. Shaw's care from February to April, 1868, with very extensive cancerous disease of the tongue. He died exhausted on April 4th, having had no bronzing of the skin. On examination, the whole of the tongue, except quite close to its upper surface, was found converted into a firm white mass of epithelioma, a deep irregular ulcer with a cancerous border eating into the left side. External to the pharynx, on the left side, was a lobulated tumour composed of a mass of cancerous glands, in part softened down; the muscular wall of the pharynx presented some nodules of cancerous matter. The glands on the left side of the neck were enlarged also, but to a less extent. Viscera generally quite healthy, save the left supra-renal capsule. This body presented in its hilus a firm whitish nodule, the size of a large hazel nut, apparently consisting of cancer with a broken-down cavity in its centre. The upper border of the capsule appeared normal.

Under the microscope the deposit had most of the characters of that in the tongue—large-celled epithelioma—but no "laminated capsules" or "nests" were seen—only a disorderly heaping together of cells more or less closely approaching the squamous epithelial type.

Mr. Henry Arnott, 21*st April*, 1868.

9. *Tubercle of one supra-renal capsule without bronzing of skin.*

This specimen was taken from the body of a boy, aged 13, who was for many months in the Middlesex Hospital under the care of Mr. Shaw, suffering from extensive spinal disease and necrosis of other bones. During the last two months of life he had daily discharged an enormous quantity of pus (averaging two pints) from an abscess connected with the carious vertebræ. There was no bronzing of skin. (Dr. Greenhow and others saw the body after death, and were satisfied as to this point.)

At the *post-mortem* examination the lungs and bronchial glands were found quite free from tubercle.

Liver, healthy-looking.

Spleen, the seat of marked amyloid change; firm clean section of organ, with clear translucent glistening appearance of Malpighian bodies; capsule thickened; organ not enlarged.

Kidneys seemed healthy, together with the left supra-renal capsule. The right supra-renal capsule, however, was enlarged, and the seat of irregular nodular deposits—firm, whitish yellow—scattered through its substance. Under the microscope the structure of this morbid deposit could not be distinguished from that of grey miliary tubercle. There was no ulceration of the intestine, or enlargement of the mesenteric glands.

This specimen is now in the museum of Middlesex Hospital.

Mr. Henry Arnott, 21*st April*, 1868.

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10. *Three cases of disease of the supra-renal capsules.*

Case I.—*Addison's disease of the supra-renal capsules.*

A. B., aged 47, was admitted into the Radcliffe Infirmary, Oxford, under Dr. Gray's care, on the 18th of January, 1865. The following sketch of his case was kindly forwarded to me by Dr. Gray, to be appended to the description of the diseased capsules in the Oxford Museum.

The patient stated that he had been ailing only "some few weeks" prior to admission, and that he had suffered from great loss of appetite, of strength, and of flesh. The prominent symptoms noticed, besides the above, were extreme depression of spirits and languor; a very feeble pulse, varying from 90 to 100; flatulent distension and general tenderness of the abdomen, more particularly about either hypo-

chondrium; *remarkably disgusting fetor of the breath*; the skin notably *sallow* and dry, the tinge being that of slight jaundice, without any corresponding tinge of the conjunctivæ, which were pearly white. There was no vomiting until two or three days before death. He gradually sank, and died on the 11th of February in the same year.

Post-mortem examination.—Besides an old shrivelled cicatrix at the apex of one lung, there was no disease in any organ of the body, except in the supra-renal capsules. Both capsules, but the left more especially, were much enlarged and very hard. Owing to the quantity of thick fibrous tissue which invested them, it was impossible to dissect cleanly either the surface of the capsules or the several nerves which entered them. I experienced the greatest difficulty in preparing these nerves and their ganglia, in consequence of the abundant thick connective tissue in which they were imbedded. On section, both capsules appeared to be converted into a dense, glistening, fibrous material, in the midst of which nodules of a yellow, cheesy-looking substance were strewn at intervals. In the left capsule the degenerative change seemed to have advanced to a farther stage than in the right, the whole of the upper part being composed of this cheesy substance, which, at one part, was beginning to break down and soften centrally.

Microscopical examination.—The fibrous substance was composed of connective tissue, with abundant cells and nuclei of different shapes. The cheesy matter seemed to be made up almost entirely of oil-globules and fatty granules, with some ill-formed cells and nuclei.

Case II.—*Addison's disease of the supra-renal capsules.*

R. H., aged 55, blacksmith, first came under the notice of my friend, Mr. Allen, of Tombland, Norwich, on the 10th of May, 1865. I am indebted to his kindness for the following history, and for the accompanying supra-renal capsules, with their plexuses, which I have dissected for the Oxford Museum.

The patient, who, in the first instance, consulted Mr. Allen for an attack of bronchitis, was then observed to be suffering from extreme prostration and a very feeble circulation, unaccounted for by any apparently sufficient cause. It was noticed also that the skin was somewhat tawny in colour, and the suspicion of supra-renal disease was aroused. He seemed, however, to recover under treatment, and was enabled to resume his work, so that he was not seen again till the 2nd of April, 1866, when he walked down to Mr. Allen's surgery,

intending to proceed to his work as usual; but he appeared so much exhausted and looked so distressed that he was induced to return home, where he remained for the rest of his life, getting gradually weaker, till he died on the 14th of May, 1866. During this last illness his chief symptoms were excessive prostration, and a horrible sensation of emptiness about the stomach, accompanied with constant nausea and great disinclination for food. The characteristic bronzing or discolouration of the skin was well marked and general over the whole body, but was most decided on the back of the neck, face, hands, scrotum, and around the nipples. The tongue was pale, cool, flabby, and covered on its surface and edges with numerous deposits of pigment. The lips presented almost a black appearance from the quantity of pigment deposited in them. The buccal mucous membrane was dotted with numerous pigment-spots. The pulse was very small and feeble. He died, apparently exhausted, sensible to the last moment. He had been a steady, hard-working man, who had struggled on in the world, and lived the greater part of his time in the country, enjoying tolerably fair health. No history of any hereditary disease could be traced.

Post-mortem examination.—The brain was not examined, but all the other organs of the body were healthy, except the supra-renal capsules. These were both very large, hard, and slightly adherent to the kidneys. They were invested by an abundance of thick fibrous tissue, which made it impossible to clean their surfaces properly, and which, penetrating into the parts around, rendered the dissection of the supra-renal nerves and plexuses a task of great difficulty. Both alike were found on section to be converted into a dense, glistening, fibrous material, in the midst of which nodules of a yellow, cheesy-looking substance were strewn at intervals. At one point, in the left capsule, this cheesy deposit was beginning to soften; but throughout both capsules the fibrous increase much predominated over the retrograde or cheesy metamorphosis. Their naked-eye appearance was, therefore, almost identical with that in the preceding specimen, and their microscopical characters were positively identical. I was unable to detect anything abnormal in the nerves themselves, either in this or in the preceding specimen.

Case III.—*Disease of the supra-renal capsules.*

H. C., aged 58, bricklayer, was admitted into the Radcliffe Infirmary, Oxford, under my care, on the 9th of April, 1868.

He stated that he was in good health until about four months previous to his admission into the Infirmary, when he caught cold, and suffered from pain in the lower part of the back, principally on the right side. This pain left him in a few days, but he then found himself unable to work as before, easily put out of breath, and exhausted when he made an effort; he also noticed that his appetite failed. His weakness gradually increased to such an extent that he became unable to walk across the room without a terrible feeling of faintness and shortness of breath. On endeavouring to walk upstairs in the hospital, he sank down exhausted, and had to be carried up to bed. His loss of appetite increased to such an extent that he at last loathed the very sight of food. He had never vomited. He had lately noticed that his legs had swelled at night. His friends reported him to have been a man of very intemperate and irregular habits of life.

On admission his body was fairly nourished, his abdomen being more than ordinarily fat. His complexion was singularly anæmic, with a sallow, "dead-leaf" aspect, recalling that of a person suffering from chronic ague. Conjunctivæ very white. Gums and mucous membrane of mouth very pale; one dark spot of pigment about as large as a pea on the buccal mucous membrane of the right side. Breath horribly fetid. Pulse 104, sharp, but very easily compressible. Skin cool.

Large patches of pigment of a yellowish-brown colour were diffused over the neck, the exterior aspect of the fore-arms, and the backs of the hands, the abdomen and back, the groins, scrotum, and root of the penis (where the colouring was of a decidedly darker colour than elsewhere), the thighs, and extensor aspect of the legs. These pigment-patches were interspersed in a singular manner with islets of very white skin; they were not rough to the touch, or upraised above the level of the surrounding skin, but the finger passed smoothly over them from the adjacent healthy skin. Tongue very pale, but clean. Bowels reported regular. No sickness, but a total loss of appetite, and overpowering nausea at the sight of food. The ankles were a little full or puffy, but there was no pitting on pressure. A systolic murmur was heard over the cardiac region, loudest at the junction of the third rib with the sternum. The percussion-resonance was slightly deficient in the right subclavian region, but nothing else abnormal could be detected either on percussion or auscultation of the thorax. The abdomen was soft and fat. There was no pain

on pressure in the loins. The urine was natural in colour and clear; specific gravity 1013; reaction acid; it contained no albumen, nor could anything abnormal be detected in it with the microscope.

He became rapidly weaker during the three following days, and on the morning of the 13th he was seized with an attack of vomiting. He looked so weak and ill that I was afraid to raise him up in bed for auscultation. The same night he became restless, and died, seemingly of exhaustion, being conscious to the last.

Post-mortem examination.—The pectoral and abdominal muscles had a healthy, ruddy colour, and there was a layer of soft subcutaneous fat, at least one inch thick, on the abdomen. The blood in both ventricles of the heart was coagulated, but the clots were dark in colour. The right ventricle was thin-walled, and its carneæ columnæ in an early stage of fatty degeneration. The walls of the left ventricle were hypertrophied, but had not their natural red colour, being pale, and, in parts, buff-coloured. In and just beneath the carneæ columnæ there was incipient fatty degeneration. The aorta was dilated and atheromatous, but its valves were competent. The right lung was firmly attached to the ribs by old, tough adhesions; it was everywhere crepitant, but generally very œdematous; it contained no trace of tubercle. The left lung was emphysematous, and generally soaked with serum, but contained no tubercle. The liver was throughout fatty. The right kidney was tough, but its colour and appearance were otherwise normal. The left kidney was pale yellow or fawn-coloured and tough; its capsule stripped off easily, save at two parts where it was adherent; it appeared under the microscope to contain an excess of interstitial connective tissue, and the sections had a cloudy appearance from the abundance of granular matter which seemed to come from the cells of the tubules.

The supra-renal capsules were both decidedly, but not greatly, enlarged. They were *soft and smooth*, and surrounded by much soft, yellow fat. On cutting into them it appeared that each of them was converted into a mere membranous, thin-walled bag or sac. *The outer surface of the bag was quite smooth, and showed no trace of roughening or thickening from excess of fibrous tissue, such as was met with in the preceding specimens.* The inner surface was irregular, flocculent, and deeply pigment-stained, giving off small shreds of a soft, rotten substance. Here and there small yellow deposits were seen in the wall. In either bag was a large white piece of soft, sloughing tissue, which was partly adherent to the inner wall, but hung out loosely into the

cavity, so as partially to fill it. There was no escape of pus or other matter from the interior of either capsule when cut into. The changes in the two capsules were identically the same, so that a description of the one would do very well for the other.

Microscopical examination.—The slough, above described, was found to consist of connective tissue, of very abundant granular matter, of nuclei lying grouped irregularly in clusters in the midst of a granular basis-substance, and of very numerous masses of pigment of various sizes, some in the form of cells, others shapeless. The small yellow spots or deposits in the wall of the capsule consisted almost entirely of fatty granules or globules, with here and there clusters of cells like pus-cells.

Remarks.—The two former of the cases here described may be called typical examples of Addison's disease proper, as it is now, thanks to the careful inquiries of Dr. Wilks, and to the elaborate investigations of Dr. Greenhow, rightly understood. Typical they are, both in their clinical histories and in their *post-mortem* appearances. The fact that in the first case there was no bronzing, while in the second, where the disease was in very nearly the same stage and of an exactly similar kind, there was decided bronzing, calls for attention, as showing, perhaps, that the depth and amount of discoloration do not depend on the stage which the disease has reached, nor on the amount of disease present. A reference to the history adds rather to the probability *that the amount of melasma bears a distinct ratio to the chronicity of the disease, or the slowness of its evolution.* In the first case, where there was no bronzing, although there can be no doubt that the disease must have been present longer than the man's account of himself would lead one to suppose, yet it is clear that he had been at work till within some few weeks of his admission, and that the disease had made very rapid progress in that short time. In the second case, where there was decided bronzing, the nature of the disease had been suspected more than a year before death, and the whole account of the case points to a very chronic advance.

The difficulty experienced in the dissection of the nerves and their plexuses from the unusual quantity of connective tissue matted around them deserves comment.

The third case is not quite so pathologically complete. For, whereas the train of symptoms so closely resembled those in the two preceding cases as to bring it at first sight, from a clinical point of

view, into the same category with them, yet the *post-mortem* appearances were by no means the same. The absence of the characteristic thickening of the surface and matting of the nerves around must certainly be regarded as a very important point of difference. Nowhere in the interior of the capsules was there any trace of the peculiar, semi-translucent, fibroid substance, or of the retrograde, cheesy masses, either in a solid or diffluent form. The soft, greasy, flaccid state of the organs contrasted singularly with the firmness and solidity of the other specimens. Again, a close analysis of the symptoms shows that, although this case had a most extraordinary resemblance to Addison's disease, yet there were one or two points in which it differed from the genuine disease. First, there was the history of previous œdema of the legs, and the condition of the ankles at the time of admission. Secondly, the pulse had not that extreme feebleness which marks Addison's disease, but was sharp. Thirdly, the appearance of white islets of skin in the midst of yellowish-brown pigment-patches is certainly not the usual kind of discolouration. It has further occurred to me, since this case came under observation, to see, in the body of a healthy person killed by an accident, a condition of the supra-renal capsules very closely resembling that here described—a kind of fatty degeneration and softening of the organ, by which the medullary or central portion becomes converted into a large cavity surrounded by the thinned and softened cortical substance. One of the capsules was here in great part converted into a similar soft, flabby bag, smooth and greasy on its exterior.

On the whole, therefore, it seems right to conclude that the third case was not a genuine case of Addison's disease; that the discolouration of the skin was an accidental melasma, in no way connected with the change in the capsules; that the symptoms of extreme debility, nausea, and vomiting must be referred to the disease of the kidneys and the fatty degeneration of the heart, which, together with the œdema of the lungs, were, in all probability, the sole causes of death. At the same time, the case affords striking proof of the very great care and extreme caution necessary in making a diagnosis in supposed Addison's disease. It shows that there may be decided melasma of a certain kind, co-existing with great prostration of strength, complete loss of appetite, and vomiting, in a case of diseased kidneys and heart, where the peculiar disease of the capsules specially denominated "Addison's disease" is altogether wanting.

Lastly, it should be remarked that in one only of the two first cases

here recorded was there a vestige of tubercle present in other organs —"an old, shrivelled cicatrix at the apex of one lung." In the other there was no evidence of tubercular disease throughout the body.

Dr. TUCKWELL, *5th May*, 1868.

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11. *Cancer (medullary) of right supra-renal capsule, left kidney, lumbar vertebræ, right clavicle, left ulna, lungs, and septum of heart.*

These specimens have been sent for exhibition by Dr. Horace Jeaffreson, of West Hill, Wandsworth, with the following notes of the symptoms and *post-mortem* appearances. The case is another illustration of cancer of the supra-renal capsule without any bronzing of the skin.

Symptoms.—G. A., aged 68, but of younger appearance, who had for several years had periodic attacks of diarrhœa reported to be of a dysenteric character, complained early in November, 1866, of severe pains about the right hip-joint, the movement of which was somewhat restricted. Beyond this nothing was observed wrong about the region of the joint; but on examination of the abdomen a tumour was found corresponding exactly in position and outline to an enlarged spleen. The tumour extended about two inches below the margin of the ribs. It was the seat of no pain and was not at all tender; and there did not appear to be any connection between it and the pains in the right hip. There was no history of ague or of any attacks referable to the kidneys. The urine was natural and contained no albumen. The general health was good; the complexion fresh; pulse steady, at 80 to 84; and nothing was complained of beyond the rheumatism, as it was considered, of the right hip.

Throughout December, 1866, and January and February, 1867, alkalies, iodide and bromide of potassium and guiacum were tried alone and in combination, without any marked influence on the pain. Early in March, 1867, the pain altered in character, and became more severe. Day and night excruciating stabs of pain darted down the right thigh in the course of the crural nerves. The pain lulled at intervals, and recurred with shocks of agony attended with jumping of the right leg. After a few weeks the left leg became similarly affected, but not so severely. Every day, from March to July 7th, morphia had to be administered. This was done hypodermically, in one third and half-grain doses, and had to be repeated twice and sometimes three times

in the twenty-four hours. The thighs were the seats chosen for the injections, which always gave a satisfactory amount of relief. The general health suffered very slightly.

From July to November the pain was much less and quite lost the agonizing character, so that no morphia injections were required.

Towards the end of November, much aching pain was complained of in the lumbar region; and a soft, pulsatile swelling gradually displaced and protruded from the situation of the three upper lumbar vertebræ.

There was a faint bruit heard with a stethoscope over the tumour, but not in the abdomen.

From the middle of November, 1867, to the date of death, March 7th, 1868, there was very gradual loss of power to retain the standing or sitting posture, owing more to the pain of the pressure of the trunk on the cancerous vertebræ than from any paralytic symptoms. Even when at last the patient was completely confined to bed, there was no paralysis of the lower limbs, the bladder, or sphincters. The bulk of the tumour in the abdomen increased, but retained the same defined outline. The right clavicle and left ulna became affected, and were the seat of acute pain. Several attacks of hæmaturia connected with the passage of uric-acid gravel and small calculi occurred; but in the intervals the urine was natural and contained no albumen. The final sinking from exhaustion was very protracted; there was no febrile disturbance, and throughout the whole duration of the case the pulse was never above 86.

After the first two months of observation, the case was diagnosed as one of cancer of the spleen, affecting secondarily the lumbar glands, left kidney, and lumbar vertebræ.

The post-mortem showed that the spleen was quite healthy and hid behind a large tumour of medullary cancer, which involved the whole of the left kidney, to which nodules of cancerous omentum were adherent as well as the descending colon. The bowel itself was throughout quite unaffected, and the mucous membrane showed no signs of old ulceration. The structure of the kidney was so displaced by medullary cancer that its anatomy was quite confused. The adherent supra-renal capsule appeared normal. The tumour was not adherent to the parts behind, and was readily separated from the cancerous lumbar glands and lumbar vertebræ. The right kidney was healthy, but the right supra-renal capsule was infiltrated with medullary cancer. Several of the lumbar glands on both sides were

cancerous. The bodies of the first three lumbar vertebræ were almost obliterated by soft cancer, as were the arches and spines in a less degree, the cancerous infiltration being continuous with that of the tumour in the back. The vertebral canal was not encroached upon, its calibre being natural; nor was the spinal cord appreciably altered in structure, but the nerves themselves, on their exit from the canal, were involved in the cancerous infiltration. The liver was quite healthy. The lungs were studded with white nodules of fibroid cancer, depressed in the centre. The valves of the heart were slightly atheromatous, and there was in the septum between the ventricles nodules of fibroid infiltration.

The bladder contained several small rounded uric-acid calculi about the size of hemp-seeds and some fine gravel. The coats of the bladder were healthy. The body was extremely emaciated. There was no bronzing of the skin. There were numerous small warts on various parts of the body.

Dr. MURCHISON, for
Dr. HORACE JEAFFRESON, 19*th May*, 1868.

C.—THYROID GLAND.

12. *Living specimen of blood-cyst of thyroid gland.*

Mary Phillips (a native of Essex, but living in London for the last forty years), married, aged 61 years, came under my care at King's College Hospital in April, 1866, with a large cyst occupying the whole of the left side of the neck, from the lower jaw to the clavicle, pushing the sterno-mastoid muscle backwards and the larynx and trachea forwards and to the opposite side.

This tumour had been growing for twelve years, but had only latterly become troublesome; it was evidently growing from, or attached to, an enlargement of the thyroid gland.

Its exterior had a lobulated appearance, the skin being stretched so tightly over it that at the apices of the lobes it was translucent and of a blueish tint.

The great tension had caused a slough of the skin of the size of a shilling at the lower part of the cyst, which threatened to give way at that point, and its pressure was causing great difficulty of swallowing as well as œdema of the left side of the face and some congestive conjunctivitis of the left eye.

She had suffered occasionally from difficulty of breathing; she was

unable to lie on the left side, and had several times lost her voice for weeks.

I tapped the cyst at the lower part, and let out about one and a half pints of reddish serum. All the symptoms due to the pressure were at once relieved, but in the course of a few hours venous blood began to escape in such considerable quantities as to cause some alarm; and even after this hæmorrhage had somewhat abated by the use of styptic injections and external pressure, a fluid more or less coloured by blood continued to ooze away for some weeks.

At length a purulent discharge was established, and at the end of July, 1866 (*i. e.*, three months after the commencement of treatment), the site of the cyst was occupied by a cicatrix adherent to a firm fibrous mass, continuous with a similar tumour on the opposite side and in front of the larynx.

The displacement of the trachea and larynx remained, but caused no trouble.

At this stage of the case I noticed a small separate cyst at the inferior angle of the anterior triangle of the neck, which I suspected as likely to cause future trouble, but which at that time was not progressing, and in fact soon disappeared beneath the edge of the sterno-mastoid. However, in April, 1867 (*i. e.*, about a year after the first tapping), the patient again presented herself with a cyst, which soon grew to the size of two fists, had a lobulated surface, and resembled the first in every respect except in size, which was about a third of that of the original cyst.

This cyst was punctured, I think, twice or three times by Mr. John Wood, and the punctures were allowed to close.

In September, 1867, I punctured it, and injected it with a weak solution of muriate of iron (one part of tinct. ferri mur. to eight parts of water), and directed the patient to use the injection herself every day.

But I had so much difficulty in keeping the opening permanent, in consequence of the clots that obstructed it, that I at length reluctantly passed a seton, which still remains, and which has produced suppuration of the cyst.

There is still occasional bleeding, or rather an escape of serum strongly tinged with blood, and a small abscess has formed, superficial to the cyst.

An enlarged gland under the symphysis of the jaw has only made its appearance since the seton was passed. This enlarged gland, taken

in connection with the continuous oozing of blood, might give the impression of the disease being malignant. I am inclined to think that it is not so, but that the enlarged gland is only due to the local irritation of an inflammatory kind, and that the cyst is probably only an hypertrophy of one of the normal gland-vesicles of the thyroid body, lined by a very vascular membrane.

A very similar cyst in the College of Surgeons Museum is thus described in the catalogue:—

"Part of the right lobe of a thyroid gland converted into a cyst, between four and five inches in diameter.

"The walls of the cyst are about three lines in thickness, and appear to be composed of the expanded substance of the organ; its internal surface is uneven, deeply seamed and wrinkled, and in many parts covered with adherent flocculent lymph and coagulated blood.

"The cyst is full of coagulated blood, and looked like the sac of an aneurysm.

"During life it was punctured, in consequence of the dyspnœa produced by its pressure on the trachea; a considerable quantity of fluid florid blood flowed from the wound, and continued till the patient died." *No.* 1503 *in the Pathological Series of the College of Surgeons Museum.*

In the case of my patient it is somewhat remarkable that, considering the great displacement of the larynx and trachea, there is little or no alteration of the voice, and no dyspnœa.

She can swallow with very little difficulty, but says that she can get down hard solids better than fluids—showing that there is still some pressure on the gullet.

Mr. W. Spencer Watson, 15*th October*, 1867.

P.S.—There are several instances of cysts of the thyroid recorded in the *Pathological Transactions*, but none having the features of the above case, in regard to the large size, the complete closure of the large cyst, and the subsequent appearance of a second. W. S. W.

D.—LYMPHATIC GLANDS.

13. *Chronic enlargement of an axillary lymphatic gland.*

A healthy male, 48 years of age, had noticed for rather more than three years a swelling in the axilla, which, gradually increasing in

size, at last pressed on the neighbouring nerves, causing numbness of the fingers. It was removed by Mr. Gay, who succeeded in separating it from the axillary vein (with which it was closely in contact) without injury to the vessel. It was uneven and nodulated, and presented on section the aspect of a so-called strumous gland in a state of commencing degeneration. Under the microscope it showed the following changes in the gland-tissues: 1st. Increase of the fibrous tissue forming the trabeculæ. These, which divide the structure into loculi, are much thicker and stronger than in a healthy gland, and give the mass a greater degree of toughness than is natural. 2ndly. Filling of the meshes of the fine network which occupies the loculi with largish nucleated polymorphous cells, in the place of the small corpuscular bodies like the white cells of the blood. The third change is a diminution of vascularity; but I am unable to say whether this is absolute and in consequence of the obliteration of old vessels, or comparative and the result of the increase in the other elements of the part. The other and secondary changes are those of degeneration, and show themselves chiefly in the abnormal cells and the connective-tissue corpuscles of the trabeculæ. The former are somewhat wrinkled and contain fat-globules, often in great abundance, whilst the position of the latter is beautifully marked out by the minute but highly-refracting granules which occupy their places. In reference to the Malpighian capsules, it may be observed that some of the loculi are subdivided into secondary spaces by fibrous septa, which probably represent the lines of contact of adjacent capsules, and may be supposed to consist of the thickened and consolidated walls of the latter. In some parts of the tumour there exist capsules which are almost healthy, and a comparison of these with other portions in which the loculi are subdivided will at once show the possibility of the conversion of one into the other. In those loculi which are filled with abnormal cells, the fine network of connective tissue is often less perceptible than in the healthy parts; but in a few spots, on the other hand, it seems as thick as, or even thicker than, is natural. It is impossible to decide whether the foreign cells arise from pre-existing ones, or independently from an exuded blastema.

Mr. William J. Smith, *3rd December*, 1867.

X. DISEASES, &c., OF THE SKIN AND ITS APPENDAGES.

1. *Microscopical specimens of larval acari from scabies.*

These specimens were young acari, which had not yet undergone the moulting process, attended with the development of the fourth pair of legs and of the genital organs. They were obtained by a process different from that hitherto adopted, from a patient affected with scabies complicated with rather severe eczema impetiginosum. A few pieces of the crusts, perhaps amounting altogether to as much as would lie on the surface of a shilling, were taken from the hands and forearms. These crusts were boiled in a solution of caustic soda (half a drachm of the solid hydrate to an ounce of water) until they were softened, and in great part destroyed. The fluid was then allowed to settle, and the supernatant portion having been poured off, the flocculent deposit which had formed was searched with the microscope. An acarus in a most perfect condition was soon found, or rather the skeleton of one, for the soft parts had no doubt been dissolved. The animal was a young one, having only two hind-legs and being considerably smaller than the adult mite commonly seen. Subsequently Dr. Fagge found two other young acari, as well as one egg, one egg-shell, and the cast-off head and fore-legs of an adult mite. Mr. Frederick Durham also found in another portion of the liquid nine young acari, and three or four eggs.

The accompanying figure (Fig. 25) is from a drawing made by Dr. Fagge. It is to be observed that the dots on the surface were made simply by way of shading the sketch. The suckers at the extremities of the fore-legs were perfect in the specimen itself, although they are somewhat defective in the figure.

This method of discovering the larval acarus scabiei appears to be of interest in several ways :—

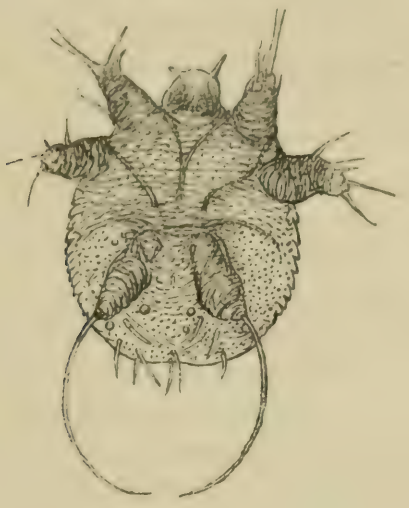
1. It may be of great service in the diagnosis of scabies in a particular class of cases—those which are complicated with a severe eczema, so that it is impossible to discover the ordinary burrows of the acarus.

2. As a means of obtaining specimens of the mite in its six-legged condition, it is much simpler than that hitherto adopted, which was first proposed by Gudden. This consisted in applying the oil of turpentine to some part of the skin of a patient affected with scabies. The oil of turpentine was intended to produce irritation, to the action

of which would be added the irritation caused by any larval acari existing in the skin. Hence papules would first arise at those points containing acari; and on cutting off the papules the parasites would be found within them.

3. It has a bearing upon the moot point, whether the crusts of scabies are capable of communicating the disease. Hebra admits the probability that young acari and males may sometimes be present in the

Woodcut 25.



crusts, but states that experimental endeavours to propagate scabies by means of them have hitherto failed. The results above described seem to show that the crusts contain acari in much larger numbers than had been supposed.

Dr. C. Hilton Fagge, 15*th October*, 1867.

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2. *Epidermal cyst containing hair.*

This, which had been noticed under the chin of a man, 40 years of age, for three years, inflamed and suppurated. After discharging slightly for six weeks, it had the size of a small chestnut; and I made an incision into it, believing it to consist of a diseased lymphatic gland. The hairs, which resembled in general appearance those of the patient's beard, were for the most part rolled-up round masses of fat, resulting, I think, from degenerated epithelial cells; some had roots, others not; and many presented a fringed aspect from loosening

of their cuticle. This change may have been produced by maceration in the purulent contents of the cyst.

Mr. William J. Smith, 3*rd December*, 1867.

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3. *Hairs showing a fungous growth in tinea decalvans.*

They are the short club-shaped hairs which are so frequently met with at the margin of the bald patch during the spread of this disease. At their free ends (which represent the points of fracture of long hairs) numerous sporules can be seen, which extend downwards, in some cases, a short distance in the interior of the shafts. The roots, as well as those portions of the stems below the situation of the fungus, are pale, thin, and dwindled. In one instance only were sporules found in the root. No mycelium can be detected. The sporules cannot be distinguished by their morphological characters from those of the *Tricophyton tonsurans*. In one hair there is a considerable bulbous enlargement immediately below the brush-like portion; and, though no sporules can be seen here, it is, I think, highly probable that they exist, but are invisible in consequence of the opacity of this part of the hair; for just above, where the fibres begin to separate, and where, therefore, more light is admitted, they can be seen distinctly. Besides the two persons from whom these hairs were removed (father and son), the mother was also affected; but, in her case, there were no short hairs and no fungus. In some of the broken hairs taken from the other two no sporules could be seen. In the scales scraped from the surface there were globules, which might have been cryptogamic; but their appearance was less characteristic than that of the sporules seen in the hairs.

Mr. William J. Smith, 21*st January*, 1868.

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4. *Two cases of vitiligoidea associated with chronic jaundice and enlargement of the liver.*

Case I.—J. B., aged 33, admitted into Guy's Hospital, under the care of Dr. Habershon, on 26th February, 1868. He has been in the army, but never on foreign service. He had syphilis eleven years ago. Five years since he brought up some blood, and he has been ill, on and off, ever since, having at times vomited considerable quantities

of blood. About two years since he became jaundiced, and this has continued more or less up to the present time; last summer it became less, but did not entirely go away; towards the end of the summer it increased again. His motions have all along been of the proper colour; sometimes they have been rather darker than natural. Towards the end of last summer, when the jaundice increased, cream-coloured spots first appeared round his eyes.

Condition on admission.—He has dark hair. His face and body are much jaundiced, the skin being of a warm yellow colour. The tint is not at all greenish, as in so many cases of chronic jaundice. He has no itching. Round each eye are spots of "*Vitiligoidea plana.*" Those round the left eye are most marked, and are perfectly well-defined. The largest is just above the upper lid, between it and the eyebrow, a little external to the tendo oculi. Close to it is a small one on the upper lid. There is another on the lower lid, just below the punctum; and a fourth, on the upper lid, close to the external canthus. The spots round the right eye are less defined, but there is a remarkable symmetry in their position with that of those round the left eye. There is one in the skin just above the internal canthus, corresponding exactly with the largest of the spots near the other eye, but of smaller size; and there is one just beneath the lower punctum, opposite another of the spots near the left eye.

These spots all present similar characters. They are of a cream-yellow colour, considerably paler than the adjacent skin. Their margin is generally well-defined, and they look as if they were raised above the surface; but nothing can be felt on passing the finger over them. There is no trace of vitiligoidea at any other part of the cutaneous surface.

The back part of the hard palate is of a yellowish colour, but can hardly be said to present any definite spots of the affection. The gums and inner surfaces of the lips are jaundiced; and on the gums there are patches which look as if the peculiar change was taking place there.

There is a sweet "*hepatic*" smell about the breath. The liver is considerably enlarged. The right lobe seems to reach rather lower than the umbilicus; and the left lobe stretches across the epigastrium, about midway between the ensiform cartilage and the umbilicus. There is considerable tenderness over the organ; and its edge cannot be felt distinctly. Its position is therefore determined by percussion. The dulness reaches up to the fifth rib on the right side.

The urine is of specific gravity 1025. It contains the colouring matter of bile.

He was ordered to take, Podophyllin gr. i., ext. hyoscyam. gr. iii. statim; and,

Potassii iodidi gr. iii., mist. gentianæ comp. ʒi., ter die.

On the 29th it is noted that "his bowels have been freely moved. He feels rather better than when he came in." He continued to improve, the jaundice diminishing greatly. On March 17th it is noted that "he feels quite well. His appetite is good."

He left the hospital on March 19th. He was greatly improved in health; but his liver remained enlarged; and the spots round the eyelids were as on admission.

I saw this patient again on June 11th. He spoke of himself as being far from well. He was still jaundiced, but (as had been the case when he was in the hospital) his face looked more like that of a man who had been in a tropical climate than that of a patient with organic hepatic disease. The spots of vitiligoidea remained as before, except that those round the right eye had increased slightly in size. No fresh ones had made their appearance. The liver was still nearly of the same size. Its edge could be felt more plainly than before, and I thought that its surface was somewhat uneven.

Case II.—This patient, L. L., was for some time under Dr. Pavy's care in the clinical ward of Guy's Hospital in the year 1866. A report of her case was published in the *Guy's Hospital Reports* (Series III., vol. xii., page 266), from which the following notes are condensed:

"Three years ago she was confined of her eleventh child, and six weeks afterwards she became affected with jaundice. The jaundice was associated with great stinging and itching of the skin, especially in the hands and feet. It lasted for about ten months, disappearing two months before her next and last confinement. A fortnight before this confinement one of her sons died rather suddenly, and the shock so upset her that two days afterwards she found herself still more deeply jaundiced than she had been before. Since then she has never been free from jaundice. Shortly after its reappearance she suffered again from stinging and itching of the skin, which was also tender to the touch. Thus it gave her pain to sit down, from tenderness of her seat; and she also experienced pain when she took hold of, or held, any hard substance in her hands. About this time small lumps began

DESCRIPTION OF PLATE XV.

This Plate illustrates Dr. C. Hilton Fagge's paper on Vitiligoidea in connection with Enlargement of the Liver, and Jaundice. The Plate represents the back of the right hand of L. L. From a drawing by Mr. W. Hurst (p. 436).

to appear on the backs of her fingers; similar ones have since come out on other parts; cream-coloured patches have likewise shown themselves upon the hands, around the eyes, and elsewhere. Those around the eyes first became visible about two months before her admission. Both lumps and patches have remained without undergoing any change, except that they have increased in size. Her skin generally is of a greenish-yellow colour. . . . . A large swelling exists in the upper part of the abdomen on the right side, which is evidently due to enlargement of the liver. It is tender to the touch and dull on percussion, the dulness extending three inches below the ribs. No irregularity is discoverable on the surface of the swelling.

"The patches observable on the skin appear as if an opaque substance pervaded its texture. The alteration is evidently situated in the cutis vera, the cuticular covering being to all appearance perfectly natural. A broad band of skin thus affected encircles each eye, giving to the face a very peculiar appearance. The deposit may also be observed to be irregularly dispersed over the sides of the face and neck. It is very conspicuous and forms extensive patches on the backs of the hands. It occurs in spots upon the palms of the hands and the palmar aspect of the fingers, and in a like manner upon the heels. Lastly, it is scattered here and there over the body generally. Where it exists, the surface is very slightly raised; at least this is the case with the patches round the eyes; but there is no loss of the natural suppleness and softness belonging to the skin. In the tips of the fingers it occurs in little discrete spots, and thus causes them to present a somewhat nutmeg appearance. On here passing the finger attentively over the surface, a slightly nodular character is perceived.

"The tubercles vary in size, the largest being of not quite the size of a horse-bean. They occur on the backs of the fingers, and particularly over the knuckles; on the ears, shoulders, elbows, and outer sides of the arms; and on the nates, knees, and ankles. Some are simple tubercular elevations, of a whitish colour; others, the largest, are irregular, and composed of clustered nodules. Upon the ears, little vessels are discernible, meandering over them. Upon the knuckles they look something like gouty concretions. (See Plate XV.) . . . . . In connection with the extensor tendons over the metacarpo-phalangeal articulations of the index and middle fingers of the right hand and of the middle finger of the left hand, there exist firm tubercular masses, which move with the tendon underneath the skin, this being perfectly healthy."

In January, 1868, I sought out this patient at her home. I found that her condition had altered greatly for the worse since she had left the clinical ward; the liver had gradually been getting larger, giving her great pain about the thighs from its weight. She had also frequently been laid up with weakness and pain in the abdomen; and she had sometimes had great pain about her side, causing her to be doubled up. The itching of the skin had been intense, so that she often scratched herself until bleeding occurred. The patches and nodules in the skin had gradually been getting larger. Her jaundice had been getting deeper in colour. She had recently been taking some sarsaparilla, after which the itching was much relieved, and she became more cheerful.

On February 4th, she attended as an out-patient under my care. I ordered her to take, Acid. nitro-hydrochloric. dil. ɱx., ext. taraxaci ʒi., decoct. sarsæ ℥i., ter die.

On February 18th, she stated that some of the creamy patches had disappeared; that her motions were darker, and her urine lighter; and that the jaundice was fainter. The nodules on her hands and elbows were also less tender than formerly, so that she could rest her elbows on a table or chair and could use her hands.

On comparing the notes which were taken at this time with those of her condition eighteen months before, when an in-patient at Guy's, under Dr. Pavy's care, it was evident that the affection of the skin had undergone considerable aggravation. The nodules in the ears were more numerous and larger. The creamy patches round each eye now extended one inch and a half below the edge of the lower eyelid. The upper eyelid was not universally affected, but only towards its edge and in a small portion near the eyebrow. The parotid regions presented extensive patches of the disease.

The tubercles over the olecrana had greatly increased in size (see Plate XVI. Fig. 1), as was shown by comparison with a drawing which had been taken when she was in the hospital in 1866. The tubercles on other parts of the body had also become larger and more numerous. There were several scattered near the umbilicus, and others round the lower part of the chest on the right side. Others, again, existed on each knee; and there were eight or more nodules upon each tibia, seated over the inner surface of the bone and over the tuberosity, and distinctly connected with the bone or the periosteum.

The liver now occupied the greater part of the abdomen. It

DESCRIPTION OF PLATE XVI.

This Plate illustrates Dr. C. Hilton Fagge's paper on Vitiligoidea in connection with Enlargement of the Liver and Jaundice (p. 444).

Fig. 1. Elbow of L. L. with *Vitiligoidea tuberosa.*

Fig. 2. Mouth with the lower lip everted, showing the change in the mucous membrane of the gums produced by Vitiligoidea.

Fig. 3. Eye with patches of *Vitiligoidea plana* on eyelid.

reached to about two inches below the umbilicus, and the left lobe could be felt not very far from the left crista ilii.

On February 25th, it was noticed for the first time that the mucous membrane of the mouth was affected. "There is a yellow discolouration of the hard palate, and this (she says) was at one time more distinct than it is at present. There is a well-marked and well-defined creamy change in the gums, especially at the angle where the gum joins the lip. There are also nodules just inside the nostrils." (See Plate XVI. Fig. 2.) She stated that she was much better, and that the patches on her skin were less distinct.

On 31st March the report says, "the liver now reaches only to the umbilicus. The nodules on the abdomen and chest are much diminished. The nodules on the hands and feet are smaller, softer, and less painful than before."

June 8th.—Since the last notes were taken, she has sometimes been better, sometimes worse. She has had great domestic trouble and anxiety. The amount of jaundice has varied greatly. Sometimes it has been scarcely noticeable: sometimes it has been well-marked; recently it has passed somewhat into the olive tint of chronic hepatic disease. The skin has undergone no marked change since the last report, except that I think the patches round the eyes are less defined at the edges than they were. She has continued, with occasional intermissions, to take her medicine.

Remarks.—These cases are well-marked examples of the disease first described by Dr. Addison and Dr. Gull in the seventh volume of the second series of the *Guy's Hospital Reports*, under the name of "vitiligoidea." It is unfortunate that they should have adopted this name, which gives the idea that the complaint in question is related to the "vitiligo" of Willan: whereas it appears to me to be an affection *sui generis*, well deserving of a name of its own.

The cases recorded by Dr. Addison and Dr. Gull are five in number. These naturally form two groups, the one consisting of two cases in which jaundice was absent, while in the other three cases this symptom was present.

Now in the three cases in which jaundice existed the changes in the skin were most peculiar and characteristic; they also agree very closely with those observed in another case, more recently in the hospital under Dr. Barlow's care, and with those of the cases above described, which were brought under the notice of the Society.

On the other hand, the two cases in which there was no jaundice, recorded by Dr. Addison and Dr. Gull present features which it is by no means easy to associate with those of the jaundiced cases. One was that of "a young woman, aged 24, admitted into the hospital with a peculiar eruption, extending across the nose and slightly affecting both cheeks. It consisted of shining tubercles, varying from the size of the smallest papule to that of ordinary acne." The other was that of a young man, aged 27, who had suffered for about eleven months from diabetes, when "an eruption somewhat suddenly appeared on the arms, at first apparently of a lichenous character. In the course of ten days it had extended over the arms, legs, and trunk, both anteriorly and posteriorly, also over the face and into the hair; it consisted of scattered tubercles of various sizes."

The following are the main features of the three cases associated with jaundice, recorded by Dr. Addison and Dr. Gull.

1. "Mrs. B., aged 42, had had jaundice for fourteen months, when a change began in the integument about the eyelids and in the palms of the hands and flexures of the fingers. The skin was at this time of a lemon tint. The affection of the eyelids consists of patches of a light opaque colour, with the surface and edges slightly raised, extending from the middle of the upper lid inwards around the inner canthus, and then outwards along the outer lid to nearly the same extent. There is a small isolated patch at the outer canthus. The disease affects both eyes equally and symmetrically, with the exception of two spots in the right lower lid, about the size of a hemp-seed, more elevated than the rest. The cuticle over the affected parts is healthy. There is no appreciable induration. . . . The palms of the hands are of an olive-brown colour; along the ridges on either side of the flexures, both of the palms and fingers, there is the same opaque, yellowish discolouration. The disease remained stationary until death, at the end of four years from the commencement of the jaundice. Towards the end, the colour of the general surface deepened to a mahogany brown."

2. Eliza P., aged 33, became jaundiced two days after a fright and a blow in the left groin. After fourteen months, a peculiar change appeared "in the hands, spreading across the flexures of the joints of the fingers and palms. Soon afterwards a yellowish patch of discolouration began near the inner canthus of the eyelid, and then a precisely symmetrical one at the same part on the opposite eyelid.

These patches are very slightly raised, and not obviously indurated; they have extended very slowly. . . . About the thumb, first joints of the fingers, and inner and interior parts of the wrists, there is a gradual transition to a tubercular prominence of the affected parts, and some distinct tubercles exist on the elbow and knee. The diseased parts are tender, so as to give her pain in using a knife to cut bread. The whole surface of the body is of a dull lemon-tint." During the next seven months, the affection became more tubercular, especially about the back of the joints of the fingers of the right hand. The patches of confluent tubercles on the elbows had much increased, and there were also tubercles on the right knee, on the superior surface of the great toe, and on both ears. In the subsequent volume of the *Reports*, Dr. Gull stated that the disease had continued to progress. He also especially noted that the tendons over the metacarpo-phalangeal joints had become tuberose, having apparently undergone a change similar to that of the skin, although the integuments over them were unaffected.

3. Mrs. J., aged 43, "for several years past . . . has been jaundiced. . . Her complexion is now of a deep olive-brown. During the last five years there has been a gradual change in the integument of the eyelids. . . . This began in the upper lid of the left eye, and extended round by the inner canthus to the lower lid. A similar affection then began in the right eyelid, and the appearances now presented by the two are remarkably symmetrical. The surface of the affected parts is slightly raised, and the edge defined. The colouration is of a light opaque yellow—'coloration feuille morte.' . . . On passing the finger over the surface, there is a slight, yet but very slight, feeling of resistance. . . . The cuticle is unaffected. . . . There is no affection of the skin of any other part. . . . The liver is enlarged."

It has been mentioned that another example of the same affection has since occurred at Guy's Hospital, in the practice of the late Dr. Barlow. This case has not hitherto been published. R. C., aged 45, was admitted on October 19th, 1864. Eight or nine years ago she suffered from an attack of jaundice. From this she perfectly recovered, and remained well till last summer, when she had an attack of dysentery, being at the time in America. Subsequently she became affected with ascites and anasarca. On October 20th, it is noted that "*her complexion is of a dark olive hue*, as are also her arms and hands, and the upper part of her body, but not her legs or feet. Her face was naturally fair. There is a remarkable light buff discolouration of the skin about

the inner canthus of each eye, extending along the inner third of the upper left eyelid; there is also a distinct patch below the lower punctum, and another on the outer canthus of the same eye. On the right eyelids are similar patches, symmetrical as regards their situation, but not nearly so large. The only exception is that there is no patch on the outer canthus. She first noticed these discolourations about ten months ago, soon after she had the dysentery. She states that they came as little spots, the size of pins' heads, and that in a few days they rapidly extended to their present size, and have remained stationary ever since. They appear slightly but uniformly raised. The cuticle is healthy over them, and there is increased sensibility of the integument."

The liver could not be felt, perhaps on account of the ascites. Nitric acid gave a slight play of colours with the urine on some occasions, while at other times the renal secretion appears to have contained no biliary colouring matter.

Paracentesis abdominis was performed on December 12th, but the ascites returned; and she was ultimately removed from the hospital in an almost dying condition.

If the three cases of vitiligoidea associated with jaundice recorded in the paper of Dr. Addison and Dr. Gull be compared with the three cases which have since been under observation at Guy's Hospital (two of which were exhibited to the Pathological Society), it will be found that they present features at once characteristic and peculiar.

In the first place it is to be remarked that the jaundice is of no ordinary kind. It is greatly to be regretted that in the reports of the earlier cases no mention is made of the state of the alvine evacuations. But in the two cases recently under observation it is distinctly noted that the fæces were of natural colour, or even darker than usual, or at least that (even when pale) they contained bile.

This inference is supported by the fact that in several of the cases, after the disease had existed for many months, the skin has remained of a yellow or orange colour, and has not displayed the greenish hue commonly seen in cases of protracted jaundice. In both the patients now under my observation this has been noticed.

It is further worthy of mention that the jaundice which occurs in combination with vitiligoidea lasts for months, or even years, and appears to have but little tendency to destroy the life of the individual affected with it.

As the papers hitherto published on this subject contain no accurate description of the state of the urine, I thought it very desirable that a careful analysis of it should be made. I therefore supplied my colleague, Dr. Stevenson, with a considerable quantity of the urine of each of the two patients exhibited to the Society. He very kindly examined it for me. He reports that the colour of the urine in each case very closely resembled that numbered seven in Neubauer and Vogel's plate; that it contained biliary colouring matter in considerable quantity; that no bile-acids existed in it, and that neither leucine, tyrosine, nor any other unusual ingredient was discovered in it.

The nature of the change in the liver in this affection is as yet entirely unknown. So far as I can ascertain, a *post-mortem* examination has as yet been made in no case of vitiligoidea. The liver seems to be greatly and uniformly enlarged. No tubera or nodules have been felt on its surface.

It is important to note that the peculiar changes which constitute the affection of the skin are by no means confined to the integument. Dr. Gull long ago remarked that in Mrs. P. some of the tubera over the knuckles were connected with the extensor tendons, the skin over them being healthy. The same thing was observed by Dr. Pavy in the case of Mrs. L. In her, too, it may be seen at the present time that over the tibiæ there are tubercles attached to the periosteum or to the bone.

I believe I was the first to observe that mucous membranes are capable of undergoing the same change as the skin. In Mrs. L. there are several little tubercles within the nostrils, beneath the mucous membrane, and the gums and the hard palate present well-marked patches of the smooth variety of the disease. The same thing may be noticed in W. B., although not so distinctly. I have not had an opportunity of observing whether other mucous surfaces are affected in a similar way.

The cutaneous affection is not only peculiar in itself, but is also remarkable for the varieties which it presents in different regions of the body, these varieties being apparently constant at the particular regions in question. They may be arranged under four heads.

1. There is the form originally described by Dr. Addison and Dr. Gull, under the name of *Vitiligoidea plana*. This is seen round the eyelids, and is usually the first manifestation of the disease (Plate XVI. Fig. 3). It begins in isolated spots near the internal canthus. On comparing the cases of R. C. and W. B., above recorded,

it will be found that there is the closest correspondence between them as to the exact spots affected at the commencement. After a time, the separate spots seem to coalesce, and to form a zone round each eye. In advanced cases (as in Mrs. L.) the "plane" variety is seen at other parts, as, for example, over the sides of the face, on the backs of the hands and fingers, and in the flexures of the elbows. It is remarkable that, although the patches look so well-defined and elevated, they can scarcely (if at all) be felt by the finger passed over them. There is not the slightest induration.

2. An appearance somewhat distinct from this is seen on the palms of the hands, on the fingers, and on the soles of the feet. Here the diseased parts have a peculiar "mottled," or "nutmeg" appearance, very well illustrated in the plate appended to Dr. Pavy's account of the case of Mrs. L. in the *Guy's Hospital Reports*.

3. Small "tubercles," less than the size of a pea, almost entirely isolated from one another, although they may be crowded together at certain spots. These "tubercles" have very much the appearance of the "papules" of one form of syphilitic lichen, but are paler in colour. In Mrs. L. large numbers are scattered over the extensor surface of each arm, above the olecranon. Others exist about the umbilicus and elsewhere. The nodules in the ears may be said to be intermediate in character between this and the next variety.

4. Large aggregated tubera. These are found on the backs of the hands and fingers (especially over the metacarpo-phalangeal and the phalangeal joints), over the olecrana, and elsewhere (Plate XVI. Fig. 1). They are very firm and hard, but freely moveable. As has already been stated, some of them are developed in the extensor tendons, and not in the skin. They are of a reddish colour, and are usually very tender. About the finger-joints, they bear a marked resemblance to gouty enlargements.

With regard to the intimate nature of the cutaneous affection in vitiligoidea, statements have been made which seem to be certainly erroneous. Dr. Pavy remarks that in Belcher's edition of Neligan's treatise on diseases of the skin this affection is referred to under the head of *steatrhœa flavescens;* and Hebra, in the English edition of his work,* asserts without hesitation that it "arises from a morbid change in the sebaceous glands."

I am inclined to think that this idea may have been based upon the appearances exhibited in one of the drawings appended to the original

* Vol. i. p. 127

paper of Dr. Addison and Dr. Gull. In this figure (Plate I.), representing the face of Mrs. J., the patches surrounding the eyelids are made to look so hard, and so distinctly raised above the surface, that any one might be disposed to think they were intended to represent yellow plates of sebaceous secretion, adherent to the skin.

However this may be, the view in question is undoubtedly a wrong one. Dr. Pavy excised a tubercle from one of the fingers of Mrs. L. It was examined microscopically by him, by Dr. Moxon, and by myself. We all agreed that it consisted of a very dense fibrous structure, with numerous minute fat granules. The papillæ of the skin over it were found to be pervaded with similar granules. Dr. Pavy considers, with much probability, that a like deposition of granules is the cause of the cream-coloured patches which constitute the plane variety of the disease.

It is worthy of note that W. B., one of the patients exhibited to the Society, is the first male who has been recorded as having been affected with vitiligoidea in association with jaundice. As we have seen, the disease in the case of John S., related by Dr. Addison and Dr. Gull, was probably of a different kind. So far as I am aware, no detailed report has been published of any instance of the complaint, except those recorded in the different papers on the subject in the *Guy's Hospital Reports*.

The general tendency of these observations is to show that vitiligoidea is a disease *sui generis*, not confined to the skin, but affecting certain tendons, the mucous membrane of the mouth, and possibly other parts likewise; that it is frequently associated with jaundice; and that the jaundice is of a peculiar kind, being independent of obstruction of the biliary passages, having a remarkably long duration, being but little liable to pass into the "green" variety, having scarcely any tendency to destroy life, and being attended with very great enlargement of the liver, of which enlargement the pathological nature is as yet unknown.

Dr. C. Hilton Fagge, 7*th April*, 1868.

P.S.—Since these cases were exhibited to the Society, I have heard of more than one instance in which an affection of the eyelids, apparently identical with that described above, has occurred without jaundice or obvious hepatic disease. Mr. J. Hutchinson has shown to me drawings of two such cases which had been under his observation. Dr. Wilks informs me that he has lately seen two ladies,

mother and daughter, patients of Dr. Bright, of Sydenham, both of whom present an affection of the eyelids, which seems to be vitiligoidea, but without evident disease of the liver. I believe that this is the first instance in which hereditary transmission of such an affection has been observed.

It is to be remarked that the disease has not in any of these cases extended beyond the eyelids, still less reached that extraordinary development which presented itself in some of the examples cited above.

Mr. Erasmus Wilson has drawn attention to the fact that Rayer figures the change in the eyelids under the name of "*Plaques jaunâtres des Paupières*," but without giving any account of it. Mr. Wilson has proposed to term the affection *Xanthelasma*; but it is evident that this name is strictly applicable only to those cases in which the disease is but slightly developed, and not to those in which tubercles are present. C. H. F., 22*nd September*, 1868.

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5. *Specimen of an unusual development of the fungus of tinea circinata.*

A little girl, 9 years old, was brought by a medical man to the skin-department of Charing Cross Hospital, supposed to be suffering from eczema of the upper arm at its outer part. The patch was about the size of half a crown; it had appeared the week previously, and when I saw it was somewhat raised, there being distinct vesicles at the outer edge and a scabbiness in the centre. One of the small hairs from the centre of the patch was extracted and examined under the microscope; it was then seen that there was an unusually luxuriant growth of trichophyton. The majority of the spores were even larger than those seen in severe cases of tinea tonsurans. They were mostly large, round, some of them oval, and distinctly nucleated. In the hair-shaft towards the base the spores had become chained, as in achorion. At the upper part of the shaft, at its outside, a minuter form of fungus was observed, similar to that seen in tinea decalvans, and which is frequently overlooked. At the outer part towards the middle, a third form of fungus was detected; the cells were larger still than those before mentioned, and presented appearances not unlike torula cells, and identical with those of the cells of achorion, found in well-marked forms. Here then, in the same specimen, were found intermingled the characters of three several varieties of vegetable parasitic growth.

Such evidence I have never before obtained clinically. It shows that size and shape are in no sense sufficient as differential tests of fungi; and the specimen supports the position, which I maintain with Hebra, that all forms of fungus found upon the human surface are modifications of one and the same vegetation, and that the range of variation of this one parasite is very large.

Dr. Tilbury Fox, 21*st April*, 1868.

XI. MISCELLANEOUS SPECIMENS.

1. *Lateral transposition of the viscera.*

This abnormal arrangement was found in the body of an old woman, brought to the dissecting-room of Guy's Hospital from the Mile End Workhouse.

It affected the whole of the contents of the thorax and abdomen, all the transposed organs preserving their relative position unchanged. There was a shallow fissure in front of the upper of the two lobes of the right lung; but this was an accidental variety not unfrequently observed, for it did not at all correspond with the second fissure of the left lung, which agreed precisely with that normally found in the right.

The dorsal vertebræ presented a slight but well-marked curvature to the left side.* This fact seems to support the old hypothesis, that the ordinary deviation of the spine to the right depends upon the pulsations of the thoracic aorta while the vertebræ are still imperfectly ossified, and to contradict the theory of Bichat, who ascribed it to the habitual use of the right arm in preference to the left; for in this case I was able to ascertain that the woman was not left-handed.

This last fact is also important, as negativing the hypothesis, which has been suggested, that left-handedness depends upon an abnormal arrangement of the great branches of the aorta. In two other cases, at least, of transposition of the viscera, the person was not left-handed. One is M. Géry's case, referred to in the note; the other is recorded by M. Gachet in *La Gazette des Hôpitaux* (31me Août, 1861).

Dr. Pye-Smith, 5*th November*, 1867.

* Cruveilhier gives three cases of this concomitant variation, two observed by himself, and one by M. Géry.

2. *Ruptured muscle from tetanic spasm.*

Mr. Francis Mason exhibited a specimen of rupture from tetanic spasm of the left rectus abdominis muscle. The patient was a girl, aged 15, who was under his care at the Westminster Hospital. About a month before her admission, on September 14th, 1867, she received a blow on the occiput with a rolling-pin. This caused a wound which readily healed, but afterwards she suffered from headache. In three weeks she noticed some stiffness about the neck and an inability to open her mouth freely. She was under treatment for a fortnight, when she died. At the *post-mortem* examination a piece of hair-pin, about an inch in length, was found under the scalp in the situation of the blow already alluded to. There was, however, no evidence of irritation surrounding this foreign body. There was some sub-arachnoid effusion, but not to any great extent, and the central parts of the brain, the corpus callosum, and the fornix were very much softened. Extensive patches of extravasated blood were noticed in the sheaths of the rectus muscles of the abdomen, and the left rectus abdominis was ruptured one inch below the umbilicus. There was much congestion in the spinal muscles of the lumbar regions. The spinal cord itself was softened, and its coverings congested.

Mr. Francis Mason, *3rd December*, 1867.

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3. *The little toes of a negro affected with "ainhum."*

The little toes exhibited have been removed from the body of a negro by Drs. Silva Lima and Wucherer, at Bahia, and have been kindly sent to me by the latter gentleman. The death of the negro had been caused by an accident. The skin and the metatarsal bones have been preserved. The toe of the right foot is only in a rudimentary condition, the anterior part of it having been almost amputated by "ainhum," and finally removed by Dr. Silva Lima several years before the man's death; that of the left foot shows a distinct groove on the internal surface, being still in the first stage of the affection. As the nature of this curious affection is still obscure, and as some members, especially the late Dr. Bazire, during the discussion on the specimens exhibited during the last season (*Pathol. Transact.*, vol. xviii., p. 277) suggested that the appearances resembled elephantiasis or leprosy, it is desirable that the entire feet should be carefully examined in such cases. In order to obtain a perfectly

impartial opinion, it may perhaps be expedient to commit the examination to a Committee, and for this purpose I place the specimens at the disposal of the Society, without myself offering any description.

Dr. HERMANN WEBER, 17*th March*, 1868.

Report on two specimens of the disease known in the Brazils as ainhum, exhibited by Dr. Hermann Weber.—The specimens consist of the fifth metatarsal bones, with the skin and soft parts attached, from the feet of a coloured person. One is from the right side, with the whole of the little toe attached. The other is from the left foot, from which the little toe has been removed at the first phalangeal or middle joint of the digit, leaving a circular cicatrix, to which the flexor and extensor tendons have become adherent.

In both specimens the metatarso-phalangeal joints are normal, confirming the statement made in our former report upon the subject as to the site of the amputation being at the middle joint of the toe. On the specimen with the whole of the little toe attached there is, at the inner side of the digits, in the bottom of the cleft between it and the next, a great thickening of the cuticle for an inch and a half in extent, in the centre of which is placed a warty-looking growth presenting the appearance of a corn or bunion, which, measured on the surface, is about three quarters of an inch wide in antero-posterior, and half an inch in vertical, diameter.

On a section being made through the growth, and continued along the whole length of the digit, the growth is seen to extend through the whole depth of the thickened cuticle, presenting a laminated appearance, depressed in the centre, and shading off at the edges into the dense, white, thickened cuticle, as is usually observed in the corns of Europeans. In the accompanying sketch (Fig. 26) *a*, *a*, point to the two sections of the growth as separated by the pins when fixed to the board. In one place the layers are seen to be separated by a chink. Towards the end of the toe, the thickened part of the cuticle suddenly ceases opposite the last joint, the rest of the cuticle, as well as the skin and fat at the bulb of the toe, being of the ordinary thickness. The thickness of the cuticle is seen at *b*, where it has been macerated off by the preservative solution. The corn is placed directly opposite to the site of the middle joint of the toe. Immediately beneath it can be traced the line of section of the dermis and rete mucosum, somewhat thinner than elsewhere, and separated by an interval or fissure from the subjacent tendinous structures. The

flexor and extensor tendons have been traced along their sheaths, and are seen (as shown in the sketch), to be continuous beneath the growth, and free from adhesions, but somewhat attenuated or flattened, as if by pressure.

The condition of the bone is somewhat remarkable. The first and second phalanges are entirely anchylosed by bone-tissue, so smoothly that some attention is required to distinguish the site of the joint. A slight thickening and a faint reddish colouration are the only remaining evidence of an increased vascularity formerly present probably in

Woodcut 26.

Shows a dissection of the diseased toe. *a. a.* point to the two sections of the growth, which are separated by the pins fixing them to the board. *b.* cuticle.

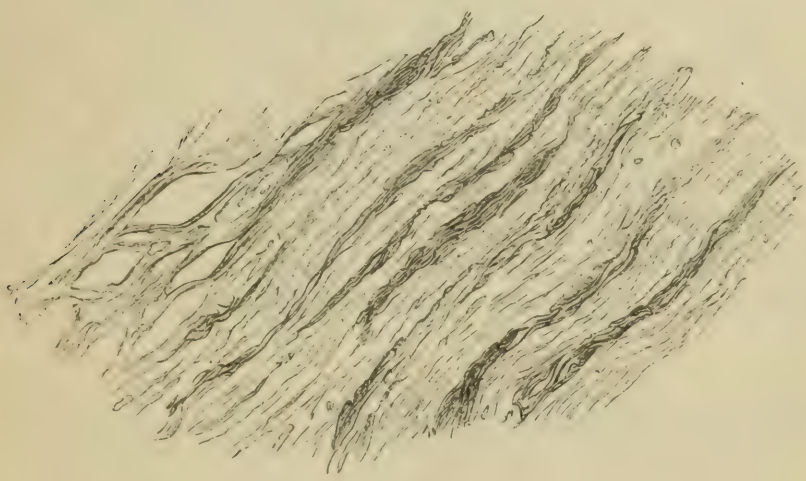
the part. There is no appearance of the ligaments of the joint, and the bone-tissue appears perfectly healthy. The periosteum is less adherent than in the healthy bone, but this is probably due to maceration. The rest of the toe, including the nail and the last joint, is healthy, slightly enlarged, perhaps, and bulbous in appearance at the end, with a shallow, gutter-like depression, extending round the outer and under surfaces opposite to the warty growth. There is no disease in the subcutaneous areolar or fibrous structures, nor are the tendons adherent to their sheaths nor matted to the investing structures.

They remain capable of moving the nail-bearing phalanx slightly. The anchylosis of the middle joint seems to have been due to the investment of thickened cuticle and corny substance, preventing for a long period, most likely for years, the movement of the joint, in the manner of a splint.

The unimpaired condition of the tendons does not seem to be consistent with the idea which first presents itself, viz., that the anchylosis has been a preliminary change in a process of progressive absorption, ending in amputation at the site of the joint (as seen in the other specimen from the right foot), inasmuch as they lie between the joint and the compressing force, and would therefore have been the first to suffer absorption.

Under a quarter of an inch object-glass of the microscope, a thin section of the growth, treated with a glycerine and potash solution, shows layers of densely-packed epithelium, alternately dark and lighter in colour, and depressed in the centre towards the deeper parts. The darker layers are harder, denser, and more resisting than

Woodcut 27.



the lighter parts. The appearance of a thin section is given in Fig. 27; at the lower parts are openings which show the splitting of the layers when stretched.

Mr. Campbell De Morgan,
Mr. John Wood, 21*st April*, 1868.

4. *Remarkable malformation of the left hand.*

A middle-aged man recently came to the out patient room of the Westminster Hospital for the purpose of exhibiting a remarkable malformation of his left hand, which presented the following peculiarities;—there is no thumb, but its place appears to be occupied by the three inner digits belonging to a right hand, whilst the index finger is bifid, and evidently consists of two fingers incompletely united together. The patient has the power of flexing both sets of fingers upon the palm, and of opposing those of one set to some of those belonging to the other set. When the hand is firmly closed, the fingers belonging to the natural portion overlap those belonging to the abnormal one, and the double index finger can then be clasped down, so as to complete the fist. The patient has a very considerable power of grip, and can use the hand for all ordinary purposes. The forearm has very limited power of pronation or supination, which seems to result from the presence of a second ulna placed upon the outer side of the normal radius, and corresponding to the portion of the abnormal right hand which has taken the place of the thumb. No pulsation can be felt along the course of the radial artery, and only a very imperfect pulsation can be felt in the position of the ulnar artery; the brachial can, however, be felt as low as the bend of the elbow. A tendon, corresponding in its relations to that of the flexor carpi radialis, occupies the middle of the wrist in front and is very readily felt. It is probable that a radius exists between the two ulnas, but it can be only imperfectly distinguished. Mr. Alexander Bruce, 17*th March*, 1868.

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5. *Report on Dr. Thomé's preparations of Cylindrotænium Choleræ Asiaticæ.*

We have received two microscopic preparations, only one of which, however, is in a sufficiently good state of preservation for satisfactory examination.*

It is labelled as follows:—

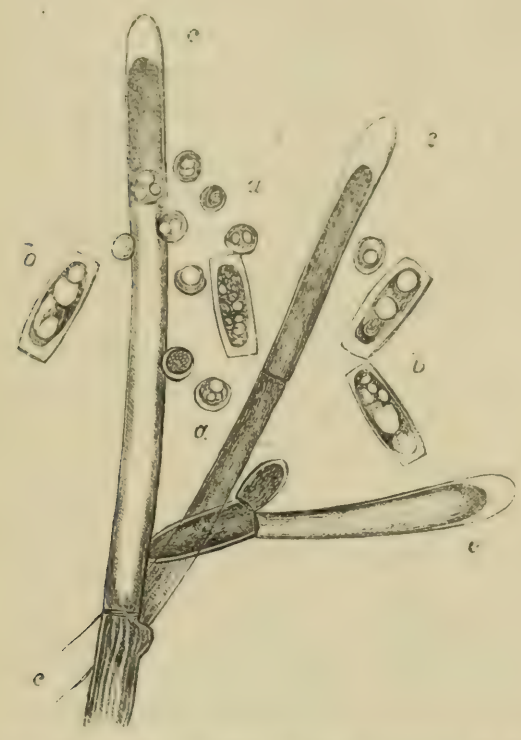
"Cylindrotænium Choleræ Asiaticæ—cultivated for seven days on

* These preparations of Dr. Thomé were exhibited to the Society by Mr. Simon, on May 7th, 1867, and were then referred for examination to a Committee, consisting of Dr. Sanderson and Mr. Hulke. See *Transactions*, vol. xviii., p. 284.—Ed.

a lemon. Vomited matter and alvine evacuations of F. R., aged 7 days."

The following microscopical structures are observed on examination, viz: (1) Spheroidal corpuscles, about $\frac{1}{4500}$ inch in diameter. (2) Cylindrical bodies, about $\frac{1}{500}$ in length, and $\frac{1}{3000}$ inch in width. (3) Mycelium filaments. The appearance of each of these bodies is shown in the accompanying drawing (Fig. 28). The

Woodcut 28.



Shows the so-called "Cholera-Fungus," consisting of filaments of Penicillium, with Micrococci, cultivated on a lemon. Drawn from Dr. Thomé's preparation. *a.* micrococci; *b.* cylindrical bodies; *c.* mycelium filaments.

spheroidal bodies refract light strongly, are of a remarkable yellowish-green colour, and resemble those described by Professor Hallier (*Das Cholera-Contagium*, p. 2) under the name of yeast-formations, or micrococci, as occurring in cholera-evacuations. These corpuscles Professor Hallier believes that he has proved by his study of their development to be produced in the cavities of the cyst-like bodies which were discovered and described in 1849 by Dr. Budd of Bristol.

the accuracy of whose statements as to their nature Dr. Hallier fully confirms.

The form to which Dr. Thomé has given the name *Cylindrotænium Choleræ Asiaticæ* is regarded by Professor Hallier as identical with the *Oidium lactis* of Fresenius, of which the forms known as Penicillium and Achlya are varieties.

The mycelium filaments in the preparation do not exhibit the characteristic peculiarities of any of these forms. They may, however, be regarded as imperfect fronds. The cylindrical bodies represented in the drawing appear to us to be undoubtedly germinating micrococci, so that the micrococci, the cylinders, and the filaments are successive stages in the development of the same growth—a development which commences with the cyst-like bodies of Dr. Budd, and ends in Penicillium or Oidium.

With reference to the mode of culture employed, we would observe that the forms in question are, according to Professor Hallier, always obtained when cholera micrococci are sown on an acid soil, as, for example, on the cut surface of a lemon.

Dr. Sanderson,
Mr. Hulke, 21*st April*, 1868.

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6. *Half of the right foot separated by senile gangrene.*

Mrs. D., a lady of good position, aged 65, in September, 1867, was suffering from pain in her right foot. On first seeing this case, she complained chiefly of the fourth toe, which was chilblain-like in appearance; the foot generally was tender on handling it and coldish; the distress in her foot prevented her from sleeping at night. At times the foot would become purplish or turn very pale; after putting it in warm water, it became purplish. My patient was pale in the face, and had a feeble circulation. There was no visceral disease apparent; the heart gave out no abnormal sound. She was rather full of flesh, but flabby. The weather at this time was warm; and the lady had been exerting herself much at the Paris Exhibition.

This condition of things led me to examine the circulation of the extremity; there was no pulsation to be discovered in any of its arteries. The femoral throughout the upper third of its course, as far as it could be felt, was hard and cord-like; and so it remains to the present time; it was also somewhat tender. No inflammation in

the neighbouring parts; no tumour to be discovered in the abdomen; the circulation in the left leg was only slightly better. A slight beat could be made out in the femoral artery, but none in the dorsal artery of the foot. This foot was always coldish, but there was no complaint of this.

About the end of October, a month from the commencement of the symptoms, the fourth toe had become perfectly black and vesicated on its under surface, and the foot was very dusky up to the line of the tarso-metatarsal articulation. Except at some patches that were deadly white, there were extensive vesications of the sole of the foot full of bloody fluid, as far back as the line above noted; the heel was slightly vesicated at the point of pressure where it rested on the bed.

The sufferings of the patient throughout were very severe, and were scarcely allayed by the steady use of opium. She complained much of her toes after they were black and gangrenous. The leg above the affected part was generally warm and looked normal, except that a redness and tenderness were noted for some time along some absorbent vessels. At this stage there was feverishness, the pulse being slightly accelerated. Towards the end of November, a distinct line of ulceration was established at the point first indicated; the foot became perfectly black up to this point.

In April of this year, the ulceration had advanced so far that the foot became moveable. On the 17th of April, by dividing some tendons and ligamentous structures, I was able to remove the portion of the foot exhibited.

May 19th.—The stump has healed considerably, notwithstanding the low state of circulation of the limb. The cuneiform bones project, are more or less carious upon the surface, and will require removal.

The treatment consisted in opium steadily and freely given; nourishment of a light kind, avoiding much stimulation; enveloping the limb in cotton wool during the cold weather—now the stump only; and dressing the exposed surface with ointment made of carbolic acid, oil, lard, and chalk.

The patient has improved much in her general health of late; she is, in fact, very well, and for some time has left her bed in the day.

Dr. MARTYN, *19th May*, 1868.

XII. SPECIMENS FROM THE LOWER ANIMALS.

1. *Diseased organs and microscopical specimens, illustrative of the affection produced in guinea-pigs by certain modes of subcutaneous irritation, and particularly by the insertion of tuberculous matter in extremely small quantities under the skin.*

In co-operation with the President I have made very numerous experiments, for the purpose of comparing the effects of inoculating tuberculous and other morbid products on the rodent animals.*

As regards the subcutaneous inoculation of tuberculous matter, the results of previous experiments have been in the main confirmed, and it has been found that the anatomical changes so produced are remarkably constant in their character and development. As regards other modes of subcutaneous irritation, whether consisting in the insertion under the skin of morbid products other than tubercle, or in mechanical irritation of the subcutaneous areolar tissue, it has been found that, provided the local irritation is of sufficient duration, and yet not of such intensity as to produce speedy death, morbid changes occur in the internal organs, of the same nature as those resulting from the inoculation of tubercle. The subcutaneous lesions consist in induration and suppuration of the subcutaneous connective tissue at the point of insertion, and in the formation of secondary abscesses or indurated nodules, often in great numbers, in the neighbourhood, these being often connected with the primary one by cords of induration. The morbid appearances in the lymphatic glands consist in enlargement, induration, and caseous degeneration. These changes are in most cases limited to those glands which receive tributaries from the seat of insertion or irritation. The caseation may result either in softening or in the formation of cretaceous concretions. In some cases the same processes are observed in other subcutaneous lymph-glands.

In the lungs the characteristic lesion consists in the formation of nodules of grey induration. The nodules occur both under the pleura and in the depth of the organ. They have the semi-transparent appearance of miliary tubercles. Frequently the largest do not exceed a pin's head in size. Their colour varies from pale grey to iron-grey. In the larger ones the grey semi-transparency is confined to the outer part, the centre being yellow and opaque. In microscopical sections

* The detailed results of these experiments will be found in the *Appendix to the Report of the Medical Officer of the Privy Council for* 1867.

of minute nodules, it is seen that each consists of a kernel, outside of which is a more transparent rind. The kernel, which may be enucleated with the point of a needle, is more opaque and unusually denser than the rest. The cortex consists of lung-tissue, in which new growth has taken place in the walls of the alveoli, so as to convert them from transparent structureless membranous partitions into cellular or vesicular septa, while larger so-called epithelial cells dotted with pigment-granules have accumulated in the alveolar cavities. The kernel contains in general none of these intra-alveolar elements. It is a mass of spherical nuclei, remarkably uniform in size, which occupy the loculi of a transparent non-fibrillated stroma—*i. e.*, a solid transparent substance modelled into holes, in which the nuclei lie. This structure has a remarkable resemblance to that of the pulp of the lymphatic glands. (See Plate XVII. Figs. 1 and 2.)

The liver is enlarged to twice or three times its normal weight, and becomes deformed like a cirrhotic liver. The enlargement and deformation are alike due to the development around the branches of the portal vein and their accompanying bile-ducts of a deposit consisting entirely of adenoid tissue—*i. e.*, of a tissue in which nuclei occupy the holes of a transparent loculous stroma. (Plate XVI. Figs. 4 and 5.)

In the spleen, the most important morbid alteration is enlargement. The organ is sometimes nearly thirty times its natural weight. This enlargement is often not accompanied with any apparent disease; but in most instances the organ is scattered, both superficially and deeply, with nodules of semi-transparent material, which, to the naked eye, most strikingly resemble miliary granulations. On microscopic examination, these exhibit no characters by which they could be distinguished from the Malpighian corpuscles of the spleen on the one hand, or from the new growths already described in the liver on the other. (Plate XVII. Fig. 3.)

In the peritoneum, the appearances are such as to throw great light on the whole process. They may be best studied in the omentum. When the diseased membrane is examined with a lens, its surface is seen to be scattered with grains of very various size, some microscopic, others visible to the naked eye. These consist in little masses of spherical nuclei. They are always situated in the neighbourhood of arteries. In their relation to the smallest arteries, the appearances recall those familiar to every one in the arteries of the pia mater when affected with tubercle. The outer wall of the artery bulges out so as to form a spindle-shaped swelling consisting of nuclei, which, although

they lie outside of the muscular coat, appear to form part of the arterial wall. But to the larger arteries their relation is different. Here the little granule is separate from the artery, and lies not merely outside of its muscular coat, but outside of its tunica adventitia. (Plate XVII. Figs. 6 and 7.) The corpuscles of which these granulations consist are, beyond the possibility of a doubt, homologous with the connective-tissue corpuscles of the part in which they are developed. From the transparency of the tissues, and the readiness with which they can be examined, even with high powers, with scarcely any dissection, they afford a splendid opportunity for studying the process by which tubercular granulations originate—viz., the proliferation of nuclear corpuscles.

I stated at the outset that the remarkable anatomical results I have described can be produced in rodent animals not merely by the inoculation of tubercle, but by any irritation of the requisite degree of intensity applied to the subcutaneous tissue. I have arrived at this conviction gradually. It was first found that the morbid process of which the lesions in the internal organs are the expression can be set up not merely by tubercle in the strict sense, but by any of the inflammatory products which are associated with it. Thus, from numerous experiments with pyæmic pus, it appeared that although most of the animals died of the immediate effects, those that survived became ultimately tuberculous. Lastly, it was ascertained that if subcutaneous suppuration were produced by merely mechanical means—*e. g.*, by the introduction of setons—the same result followed. In an animal killed four months after the insertion of setons, the condition of the internal organs has been found to be altogether indistinguishable from that due to inoculation.

From the facts related, it is evident that my results afford no ground for believing in the existence of a tuberculous virus. They seem, however, to throw an important light on the genesis of the tuberculous process. If we are entitled to assume that the process set up in these animals is in reality tuberculous, they certainly seem to afford support to the doctrine which has for some years been taught by Niemeyer and some other pathologists in Germany, according to which the miliary process—the formation of grey granulations—takes its start from the caseous degeneration of some previously existing pathological product; for, if I rightly interpret the facts, the enlargement and caseation of the lymphatic glands nearest to the irritated part constitute a necessary link in the chain of pathological events by

DESCRIPTION OF PLATE XVII.

Microscopic drawings to illustrate Dr. Sanderson's Communication on the Inoculation of Tubercle (p. 456).

Fig. 1. Section of a peri-bronchial granulation, consisting entirely of nuclear corpuscles. *a*, Bronchial tube; *b*, *b*, nuclear corpuscles.

Fig. 2. Section of cortical part of a sub-pleural iron-grey induration.

Fig. 3. Vertical section of a sub-serous miliary nodule of the spleen.

Fig. 4. Section of acinus of liver with new growth surrounding it. *a*, Hepatic vein; *b*, portal vein; *c*, bile-duct; *d*, *d*, *d*, new growth.

Fig. 5. Section showing new growth of adenoid tissue surrounding a bile-duct. *a*, Section of bile-duct; *b*, nuclear growth.

Fig. 6. Artery of omentum with surrounding granulation.

Fig. 7. Sketch (somewhat diagrammatic) showing artery and vein of omentum of larger size and surrounded by a tubular sheath containing fat-cells, among which is a heap of semi-transparent adenoid tissue. On either side, the sheath is continuous with the delicate net work of which the omentum consists.

N.B. The corpuscles of the new growth are of about the same size in all the organs in which they are observed, viz., $\frac{1}{2500}$ to $\frac{1}{3000}$ inch in diameter.

Fig. 3.

Fig. 4.

Fig. 6.

Fig. 5.

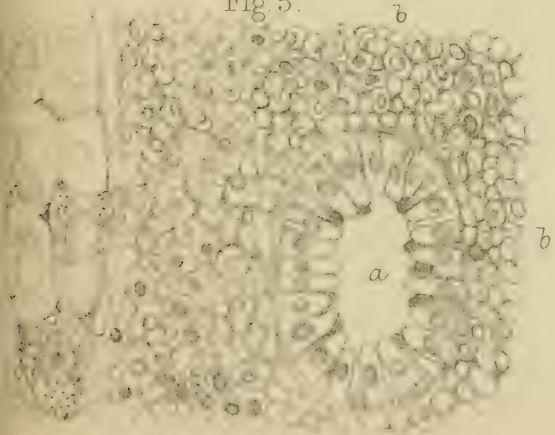
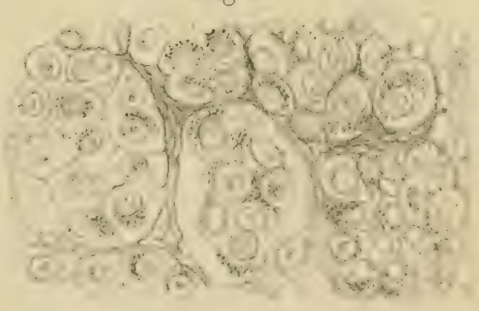


Fig. 1.

Fig. 2.



which the primary results of local subcutaneous irritation are connected with the tuberculization (if we may call it so) of the internal organs. Dr. Burdon Sanderson, *7th April*, 1868.

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2. *Specimens showing the effect of purulent inoculation in the guinea-pig.*

A guinea-pig was inoculated on the 5th of February, 1868, with *healthy* pus taken from a whitlow on the inoculator's finger. The animal was kept at first in a box, and afterwards had the run of a large garden. On the 3rd of March, it was found dead, in good condition. The spleen contained three small tubercles, the liver two, and the mesenteric glands were about the size of a nut. The tubercular matter under the microscope presented all the signs of ordinary tubercle in the lower animals.

The example goes far to show that the pus in this instance acted as an extraneous body, as in the examples of quicksilver and other substances, and that there is nothing specific in the nature of tubercle.

Dr. Crisp, *7th April*, 1868.

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3. *The stomachs of wild rabbits containing Strongylus retortiformis, and the livers affected with (so-called) false tubercle.*

The livers, with drawings of the stomach, worms, and casts of the livers in wax, show the disease called false tubercle. More than twenty years since I saw many rabbits affected with this disease in the liver; and, judging only from external appearances, I supposed it to be tubercular. About six years since, however, I examined the contents of the bile-ducts microscopically, and found that the lesion bore no resemblance to tubercle, but consisted of what appeared to be the ova of some entozoon. The liver when examined externally presents a spotted tubercular appearance, but the spots soon disappear; and on section they are seen to arise from the ova I have mentioned, which fill completely the bile-ducts. In the first stomach of most rabbits and hares, in certain localities, the lining membrane is covered with red thread-like worms, varying in length from half to three quarters of an inch, the males being a little smaller than the females, and having, as in all the *Strongyli*, an expanded tail. Rudolphi, Deising, Bremser, Bellingham, and others have described these worms as seated

in the intestines; but, speaking from a large number of examinations, I have rarely found them in the intestinal tube, and then I believe accidentally; the first stomach is their habitat, and they are very numerous both in the hare and the rabbit; probably scarcely any entozoa are so frequent among our British animals as these. They are, as I have shown in the case of the *Strongylus filaria* in the lungs of the sheep, taken in with the food, and, as is the case with those animals, are more frequent in overstocked ground; but they differ materially in one respect from the ova of *Strongylus filaria*, for whilst in this worm the egg-crust is often broken during expulsion, and the young worm expelled (as I have often seen under the microscope), in the former worm the eggs are never mature, although they contain granular matter in various stages of segmentation,—sometimes a granular mass completely filling the shell, then a contraction or aggregation of granules, next a central division, and lastly four, six, and sometimes eight, circular granular masses. A further development than this I have not met with, the completion of the growth probably taking place out of the body of the rodent. Experiments I am now undertaking will, I hope, settle this question. I am inclined to think that these bodies found in the biliary ducts are the ova of the *Strongylus retortiformis*.*

Dr. Crisp, 7*th April*, 1868.

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4. *Specimens of false tubercle (so called) in the lungs of sheep.*

Specimens of portions of the lungs of sheep were exhibited for the purpose of showing the so-called false tubercle produced by the young and ova of the *Strongylus filaria*. These so-called false tubercles consist of white tubercle-like knots, which, on examination under the microscope, are found to consist of the ova of the *Strongylus*, of many of the young worms, and sometimes the *débris* of the parent worm. In addition to these are lymph, pus-globules, and imperfectly-formed cells, but no deposit that can strictly be called tuberculous, although M. Colin, Professor of the Veterinary School, Alfort, has produced tubercle in rabbits by inoculation with this matter. It is on this account that I again bring this subject before the notice of the Society.

Dr. Crisp, 7*th April*, 1868.

* But see page 470.—Ed.

5. *Passage of the red blood-corpuscles through the walls of the capillaries in mechanical congestion.*

It is my intention to exhibit to the members of the Society to-night Dr. Cohnheim's experiment illustrating the effects of venous stasis and the passage of the red blood-corpuscles through the walls of the capillaries in this condition; but before describing what is to be seen in this experiment, I may state that mechanical congestion is not the only pathological condition in which this same diapedesis is known to occur. Dr. Cohnheim had shown previously that in the process of inflammation, at the same time that the white corpuscles penetrated the walls of the veins, so did the red corpuscles make their way through the walls of the capillaries. After this Stricker of Vienna, first,* and then his pupil, Prussak,† showed that by injecting a small amount of a ten per cent. solution of chloride of sodium beneath the skin of a frog, an artificial scorbutic condition was produced, in which extravasations of blood took place not only into the web of the frog's foot, but also into the various internal organs.‡ The same extravasations of blood took place in rabbits similarly treated; and such effects seemed to result from the administration of chloride of sodium only, other salts having been tried without the same result. On microscopic examination of the frog's web after such an extravasation, it was clearly ascertained that the hæmorrhagic maculæ in this situation resulted from the greater accumulation in certain spots of red blood-corpuscles which had passed out individually through the capillary walls. The passage of these through the capillary wall could be seen with the greatest ease, and such being the case, it seemed only fair to infer that the hæmorrhagic effusions into the internal organs and other situations had a similar mode of origin. These experiments I have repeated on the frog, and I am able so far to endorse the statements of Stricker and Prussak.

Turning now to Dr. Cohnheim's experiment,§ which I have also repeated several times, I will briefly describe its principal features. A frog having been previously narcotized by the subcutaneous in-

* *Journal de l'Anatomie et de la Physiolog. de Robin.* No. 6. 1867.

† *Wiener Acad. Sitzungsber.* Math. Naturw., Cl. 2. Abth. lvi., 13–23.

‡ Dr. Sharpey has been kind enough to draw my attention to the fact of the existence of a paper in the *Philosoph. Magazine* for 1846 by Dr. Augustus Waller, entitled "Microscopic Observations on the Perforation of the Capillaries by the Corpuscles of the Blood, and of the origin of Mucus and Pus-Globules." To this I shall refer more fully on a future occasion.

§ Virchow's *Archiv.* xli.

jection of woorara, the femoral vein is tied with a piece of twine (including a portion of muscle, so as to facilitate the subsequent cutting of the ligature), and soon the capillaries and veins become gorged with blood to an increasing extent. Serum is gradually poured out into the web also, causing this to become notably œdematous. After a time a distinct oscillation of the blood takes place in the vessels: much of what is driven forward, during the systole of the ventricle, into the capillaries and veins, is returned into the arteries by elastic recoil during the diastole of the ventricle. The red blood-corpuscles gradually arrange themselves crossways in the capillaries, and already in the space of about fifteen or twenty minutes complete stasis may be seen to have taken place in certain capillaries, the corpuscles in which appear to have become fused into a homogeneous mass, interrupted here and there by the presence of a white corpuscle. This stasis now quickly extends to other capillaries, and later to the veins themselves. In the space of about forty minutes it may be seen that capillaries which before presented an even, cylindrical appearance, begin to exhibit projections from their walls, which go on increasing in number and size till these assume an utterly irregular bosselated outline. Some of the projections afterwards separate themselves, and may be seen in the adjacent tissue as unmistakeable red blood-corpuscles. But that they are really such may now be seen more satisfactorily by cutting the ligature on the femoral vein, when in a very short time the homogeneous and apparently fused mass in the capillaries again becomes resolved into individual corpuscles, and the circulation is soon restored throughout the web. Then there may be seen, in addition to the red corpuscles which have passed completely through the capillary walls and are lying imbedded in the tissue around, numerous others in all stages of their outward passage—some showing only a small projection outside the capillary wall, whilst the major part of the corpuscle is within (the two portions being united by a thread-like part, actually in and constricted by the capillary wall); others showing half of the corpuscle out, and half within, the vessel; and still others, where three-fourths or more of the corpuscle may be without, and only the smallest portion (separated by the constricted part within the vessel wall) lying in the interior of the capillary itself. Thus the corpuscles are actually seen in the capillary walls and in all stages of their outward passage.

In explanation of this phenomenon, Dr. Cohnheim adopts the view first advanced by Oedmanson (*Centralblt.*, 1863, p. 868), that the

capillaries are formed by the juxtaposition of a number of flat epithelial cells, in the angles of union of which certain stomata exist: through these he thinks the corpuscles are forced by reason of the increased pressure in the vessels, favoured by the transverse position previously assumed by the corpuscles themselves. This view as to the structure of the capillaries is based upon the appearances presented by these vessels after staining with a weak solution of nitrate of silver, when brown lines are said to be produced, such as exist between pavement-epithelium in other situations. This conception as to the structure of the capillaries is, however, completely rejected by Stricker (*loc. cit.*), who seems to have made careful observations on their structure and genesis. He maintains that even though such markings are to be met with after staining with nitrate of silver, it is not fair to infer from this as to the mode of genesis of the capillaries; and that their formation by the juxtaposition of epithelial cells is directly negatived by observations which he has himself made upon the subject. He believes them to be composed of a yielding, homogeneous, and contractile protoplasm, which, in harmony with the properties of this substance generally, has the power of developing processes or outgrowths. These, Stricker says, he has seen developing from the walls of the capillaries; and he maintains that they subsequently become channelled, and unite with other similar processes, so as to form new capillaries. His explanation (and also Prussak's) of this passage of the red blood-corpuscles is, not that they are forced through certain pre existing pores in the capillary walls, but that they pass out by virtue of some "active condition" of the capillary wall itself. From what I have myself observed, I am unable to endorse the explanation given by either of these observers; and my own opinion is, that the corpuscles pass out in all these conditions—whether in inflammation, in the artificial scorbutic state, or in mechanical congestion—by virtue of certain active amœboid movements to which the red blood-corpuscles have been excited, owing to alterations in the nature of the blood-plasma having an irritating effect upon them; in fact, that they effect their outward passage by virtue of certain obscure amœboid movements, such as the white blood-corpuscle has been long known to exhibit, and by means of which they so readily make their way through the walls of the veins, as shown by Dr. Cohnheim, and as I hope to demonstrate to the members of the Society on a future occasion. I was led to adopt this view for the following reasons. I observed, first, whilst watching the phenomena of inflammation in the frog's

foot, that in certain capillaries beyond the region where this process existed in its greatest intensity, and in capillaries through which the blood was still flowing, certain red corpuscles seemed occasionally to linger by the side of the capillaries, applying their *flat* surface against its walls. Sometimes these were swept away by the blood-stream passing over them; and occasionally before they were completely separated from the capillary wall, I have seen them adhering to it for a moment or two by means of a small, thread-like process, as though adhesion had taken place to some portion of the wall, which had only been overcome by the blood-stream, after the drawing out of a tag-like projection from the yielding substance of the corpuscle. Other corpuscles which had applied themselves to the capillary wall in the manner above described were not swept away, and in the space of about fifteen or twenty minutes a distinct projection of the corpuscle was to be seen on the outer side of the capillary wall, which went on increasing until the whole of the corpuscle was within the tissue outside the vessel, all this taking place whilst corpuscles and blood-plasma were still freely circulating through the capillary. Precisely similar phenomena may be seen after the subcutaneous injection of chloride of sodium—the corpuscles passing out in the same manner. And in repeating Dr. Cohnheim's experiments on mechanical congestion, I have almost invariably seen that the first corpuscles which penetrate the walls of the capillaries are not those situated in the vessels whose contents have undergone complete stasis and have become fused together, but rather those contained in capillaries in which an oscillation of blood-plasma and corpuscles is still taking place. Here also individual corpuscles apply themselves to the capillary wall by one of their surfaces, and after a time the process of perforation takes place. Occasionally considerable numbers of corpuscles pass out in this way from capillaries in which no stasis has taken place, and that too, somewhat earlier than the similar exodus of corpuscles from the capillaries in which complete stasis has occurred. Therefore, because the corpuscles seem to pass out indifferently at all parts of the wall of the capillary, and with no approach to anything like a regular arrangement, such as one might expect to occur if they were extruded through pre-existing stomata at the junctions of epithelial cells; because the increased tension in the vessels seems adequate to account for the passage outwards of fluid from them, but not of corpuscles contained in this fluid, which by the ordinary laws of fluid pressure would be pressed upon equally in all

directions, unless one of their surfaces were absolutely in contact with the wall of the vessel; and lastly, because the mode in which the corpuscles are observed to become applied by their flat surfaces to the capillary wall is the very reverse of that indicated by Dr. Colnheim as the favourable position * which the corpuscles assume for forcible extrusion through pre-existing pores; for all these reasons it seems to me that his explanation is untenable. With regard to Stricker's supposition that the corpuscles are passed through by virtue of some active condition of the capillary wall itself, I have been able to observe nothing either for or against it—it seems a pure hypothesis, with not much to be said in its favour. And I think the evidence adduced points rather to the passage of the corpuscle outwards, by reason of some active condition which the corpuscle itself assumes, its adhesion to the wall of the capillary being produced by the throwing-out of a small amœboid projection which tends to adhere to and commence the perforation of the elastic and yielding capillary wall; this view is favoured also by the fact that when more than half of the corpuscle is lying outside the vessel, this portion has often the most irregular shape, and sometimes appears more or less subdivided.†

Having formed this opinion from observation of what takes place in these processes, I afterwards found a paper in a recent number of Virchow's *Archives*.‡ by Dr. Friedreich, of Heidelberg, fully describing certain remarkable changes of form, also protrusions of processes and subdivisions—which he had seen taking place in red corpuscles found in the concentrated urine of a patient suffering from renal disease; and also notable alterations of shape of red corpuscles taken from a patient supposed to be suffering from leukæmia. These phenomena he believed to be vital rather than physical, and excited by certain abnormal irritative conditions acting upon the corpuscles. Max Schultze § also, and Dr. Beale,‖ have observed notable alterations

* Though I cannot myself think that this cross-position of the corpuscle in the capillary would be at all favourable for its forcible extrusion by increase of fluid pressure, the tension of fluid would be equal on each side of the corpuscle, and the lateral tension would produce an equivalent pressure of fluid against the walls of the capillary, though not of the corpuscle contained in this fluid.

† Since this communication was made to the Pathological Society, I have seen (April 27th) pretty rapid and most manifest alterations in shape of many red blood-corpuscles after they had passed out of the capillaries and were lodged in the mesenteric tissue of the frog. (See Fig. 29, p. 469.)

‡ *Ein Beitrag zur Lebensgeschichte der rothen Blutkörperchen*, xli., 396–411.

§ *Archiv für Mikrosk Anat.* Bd. i. 1865. S. 25.

‖ *Trans. of Microcop. Soc*, 1864.

in the shape of red blood-corpuscles when subjected to a high temperature; but these, as the respective observers conjectured, were probably changes occurring after the life of the corpuscle had been destroyed. Dr. Beale hints, however, that similar changes of form may occasionally take place during life. Bearing in mind also two characters of the red blood-corpuscle as described by Dr. Roberts after the action of magenta and tannin respectively, it seems well that the attention of future observers should be directed to these peculiarities, and to the particulars above mentioned, in order to determine more certainly than has yet been done, how far amœboid movements and contractions do take place in the much-examined and much-written-about red blood-corpuscle. Presuming that these corpuscles do pass through the walls of the capillaries in the manner I have indicated, it seems to me that they may be made to assume this active condition either by changes in the nature of the blood-plasma, or by some unknown action of the tissues outside the vessel upon the corpuscles within, such as has been assumed to exist in inflammation. In the scorbutic condition, and in the state of mechanical congestion, I should imagine that changes in the nature of the blood-plasma would be the most potential—such changes in these two conditions being perhaps not altogether dissimilar. Certainly I have noticed in both these conditions that most of the corpuscles which can be seen to penetrate the walls of the capillaries present an easily appreciable and similar alteration from their normal structure. This consists in the presence of from two to four small clear spots, looking like vacuoles, in each red corpuscle. What significance the existence of these may have, as pointing to an abnormally active co-existing condition of the corpuscle, must be left for future observation to determine.

I have two specimens to exhibit to the members of the Society; one in which the femoral vessel remained tied for about four or five hours yesterday, and one in which the femoral vein is at present tied, and in which almost complete stasis of blood exists throughout the web.

Dr. H. Charlton Bastian, 21*st April*, 1868.

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6. *Specimens showing some of the phenomena of inflammation, and especially the migration of the white corpuscles of the blood.*

It is my wish to exhibit to the members of the Society to-night the phenomena of inflammation in the mesentery of the frog, as originally

demonstrated by Dr. Cohnheim.* I will not go into details concerning the method of experimentation, but will merely state that all the phenomena of inflammation may be seen in the mesentery of a frog previously narcotized by the subcutaneous injection of a few drops of a solution of woorara, the inflammatory condition being induced by the mere exposure of the membrane to the influence of the atmosphere. In a very short time the ordinary changes may be seen on the side of the vascular system, with which we have so long been familiar. The temporary contraction on the side of the small arteries is soon succeeded by their dilatation, with increased rapidity of flow through them; then gradually the blood-flow diminishes in rapidity, and the so-called "inert layer" next the wall of the vessels—especially in the veins—becomes more and more filled with colourless blood-corpuscles, as was first pointed out, about the same time, by Dr. Wm. Addison and by Dr. C. J. B. Williams in this country.

But then, after this has been going on for a time, other phenomena occur of the most startling and interesting nature, such as Cohnheim principally has made known to us, and such as I hope to be able to demonstrate to the members of the Society to-night.

The white corpuscles, which have previously been adhering to the walls of the blood-vessels, begin to exercise independent movements of their own, whereby they gradually work their way through the coats of the vessels. So that, after a variable time—and occasionally even within half an hour of the first exposure of the mesentery—multitudes of white corpuscles may be watched gradually making their way through the coats of even thick-walled veins, also through the smaller veins, and in less numbers through the capillaries. The process may be best watched by selecting one of the smaller or medium-sized veins which is surrounded by a definite lymph-space. There, white corpuscles may be seen in large numbers within the vessel; others may be observed actually within the substance of the wall, and others still projecting more or less in the form of bud-like protrusions from the outer wall into the surrounding lymph-space. A single corpuscle may be seen to pass completely through the wall of a medium-sized vein in twenty to thirty minutes. The rapidity of transit, however, varies much in different instances. By selecting a vessel, such as I have mentioned, with a surrounding lymph-space, we are then able to see that those corpuscles which have more than half emerged from its wall

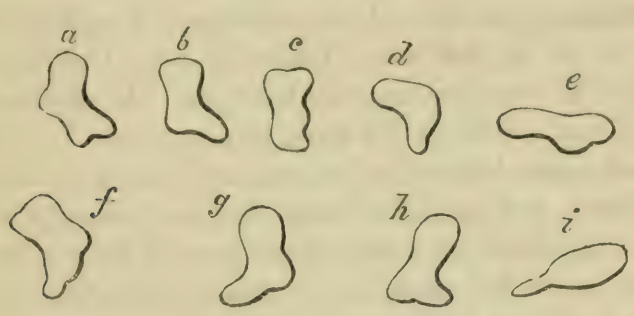
* *Ueber Entzundung und Eiterung.* Virchow's *Archiv.* Band xl.

begin to exhibit often the most active amœboid movements, throwing out processes and varying in form from moment to moment. Projecting into the lymph space as they do, there is nothing to obstruct our view of these amœboid movements, which go on also for some time after the corpuscle has completely freed itself from the wall of the vessel. And we see in these movements also, as Cohnheim suggested, one of the principal explanations of the outward passage of the corpuscle through the vessel-wall: whatever incites it to take this course, it seems obvious that it actually effects its passage by virtue of its own amœboid activity. The white corpuscles also come out in smaller quantities through the walls of the capillaries, and, in later stages of the inflammatory process, even through the walls of the arteries. The *white corpuscle outside the wall of the vessel is, according to Cohnheim's view, a pus corpuscle*; but it is not my object at present to discuss this doctrine.

In addition to this migration of white corpuscles in inflammation, the red corpuscles may also be seen passing through the walls of the capillaries in moderate numbers. I am unable, however, to receive Cohnheim's explanation of the mode in which this is brought about. I do not think it is at all a question of their being forced out through pre-existing pores, in a mechanical fashion, by virtue of the increased tension in the capillaries. It seems to me that the red corpuscles here, in inflammation, make their way through the walls of the capillaries in just the same manner as I explained at the last meeting of the Society, when exhibiting the phenomena of mechanical congestion. They seem to me to do this in both cases by virtue of an inherent amœboid activity of their own, similar to, though less manifest than what we have so long been familiar with in the white blood-corpuscles. I will not again repeat the reasons which have induced me to adopt this view, though I will add one or two statements of fact that have come under my observation since, and which seem still further confirmatory of the view I have adopted. Thus, the passage of red corpuscles is by no means limited to the capillaries, or even to the smallest arteries and veins; for I have watched a red corpuscle emerging from the wall of a vessel of such considerable thickness that I was induced to measure this with the micrometer. The thickness of the wall of this vessel was as much as $\frac{1}{1300}''$. From what I have seen lately, also, I believe it is not at all uncommon for red corpuscles to pass out in this way through thick-walled vessels after the inflammatory process has been going on for two or three hours. Wherever corpuscles are arrested within the irritated area (*i. e.*, the

area where the inflammatory process is going on), there it seems to me that both white and red become stimulated into amœboid movements, by means of which they are enabled to make their way through vessel-walls of even considerable thickness. Then, I have actually seen the most unmistakeable alterations in shape taking place in red corpuscles which had passed out through the walls of the capillaries, and were lying in the tissue of the mesentery between the two layers of the peritoneum. (See Fig. 29.) These movements did not consist in the throwing out

Woodcut 29.



Shows amœboid changes of shape in the Red Blood-Corpuscles of the Frog. *a. b. c. d. e.*, successive changes of shape in the same blood-corpuscle in $2\frac{3}{4}$ minutes. *f. g. h.*, changes of another corpuscle in 9 minutes. *i.*, red corpuscle, with amœboid protrusion, seen in tissue of mesentery.

and retraction of processes, but rather in contractions and changes of shape in the whole corpuscles. Seeing the situation of the corpuscles, also, it would seem that the only possible extraneous cause of such modification in shape would be contractions in the surrounding mesenteric tissue itself. I do not think, however, that the alterations in form that I have seen could be explained in this way; they seemed exactly to resemble the changes which an amœba undergoes.

It has been stated lately, in one of the medical journals, that to Dr. Augustus Waller * belongs the right of priority, both in discovering this passage of the white blood-corpuscles through the walls of the veins in inflammation, and in the conclusion that the blood-corpuscles which had migrated became pus-corpuscles; but, I think, after a most careful examination of the evidence, it might with much more

* "Microscopic Observations on the Perforation of the Capillaries by the Corpuscles of the Blood, and on the Origin of Mucus and Pus-Globules."—*Philos. Magazine*, 1846.

justice be stated that Dr. William Addison* anticipated in all important particulars the observations of Dr. Waller, rather than that either of them had anticipated Dr. Cohnheim. The observations of the latter are so much fuller and more precise in every way that, as it seems to me, we can regard the observations of Addison as only anticipatory to a very partial extent.†

At present, it is true, Cohnheim does profess the doctrine which was maintained by Addison, that all pus-corpuscles are white blood-corpuscles which have migrated from their normal situation within the vessels; though the former probably regards this as a much greater departure from the ordinary processes of nutrition than it was considered to be by Addison. Probably, also, Cohnheim has gone much too far in renunciating completely the old doctrines as to the formation of pus. Will he not soon, in part, revert to the doctrine of Virchow, and again believe in the origin of *some* pus-corpuscles from connective tissue and epithelial nuclei, however strongly he may maintain his own particular view that others proceed from white blood-corpuscles, and are, in fact, *white blood-corpuscles in the wrong place?* We believe that some such combination of doctrines can hardly fail to be that which will ultimately prevail; and we may even go farther than Virchow in his particular direction, till we come to hold with Dr. Beale, that pus-corpuscles may proceed from the proliferation of the nuclei of any tissue whatever. Dr. H. Charlton Bastian, *5th May*, 1868.

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7. *Specimens, wax casts, and drawings showing the origin of the so-called false tubercle in the wild rabbit.*

It will be remembered that on the 7th of April this year I showed specimens and drawings of false tubercle in the liver of the wild rabbit, which I supposed after a too superficial examination were the ova of the *Strongylus retortiformis*, a worm very generally found in the first stomach of the rabbit and hare, and not in the intestines, as stated by Rudolphi, Bremser, Dujardin, and others. Since the period alluded to I have had several rabbits sent to me affected with this so-called verminous tubercle. I have made very careful examinations of the liver and other organs, and the subjoined is the result.

* *Experimental and Practical Researches on Inflammation*, 1843.

† The evidence in support of this view I have given in detail in a leading article at p. 483 of *The British Medical Journal* (May, 1868).

The bile-ducts are filled with a white creamy matter, which bears no resemblance in its microscopic characters to those of tubercle; this matter consists chiefly of innumerable ova of an entozoon (as I believe), and in many specimens they amount to several millions. I have frequently found them in the gall-bladder also, but never in the pancreatic duct.

They are present in comparatively small numbers in the intestines, as are also the eggs of the *Strongyli* before named.

As might be expected, the animals with this condition of liver are generally thin and have large bellies, and the disease is more common in young and half-grown rabbits; but up to the present time I have not found it in those that take the breast-milk only. The disease does not affect all rabbits in the same locality, the proportion of the sound animals being from twenty to thirty of the diseased ones. More are affected in marshy and low districts; but I have found the disease prevail also in dry and sandy soils. In many localities all the rabbits are said to be entirely free from this affection. The age at which it first appears is when they are about three quarters grown, and I have seen it as early as about four weeks from birth, and in May and June it appears to be the most frequent. In the liver of the hare this disease is comparatively rare; and I have never met with it in a tame rabbit. The blood-corpuscles in this disease are very lax and yielding, so that when flowing they become linear and apparently run one into the other. There is also a larger number of free nuclei, about the eight thousandth of an inch in diameter; white corpuscles are less frequent than in the blood of healthy rabbits, but large white albuminous flakes are very abundant. The muscular tissue of the heart and other organs presents no abnormal appearance.

What are these organisms? The drawings exhibited show them in various stages of development; they bear some resemblance to the ova of the *Strongylus retortiformis*, a worm I have always found in the first stomach of rabbits affected with verminous tubercle in the liver, but there is a great difference in their size; thus the eggs of the *Strongylus retortiformis* measure about $\frac{1}{500}$ of an inch in long diameter and $\frac{1}{750}$ inch in short diameter, whilst the bodies in question measure $\frac{1}{230}$ inch in the long diameter and $\frac{1}{460}$ in the short. On comparing these organisms with the ova of the *Gordiones*, the *Tæniæ*, and other worms, I find none that resemble them. I have kept them in water for a long time, in the liver and out of it, and no signs of development have been observed. I placed four livers containing millions of these bodies in

water in a greenhouse during the heat of summer, and at the end of three months they are unaltered; so that up to the present time I am doubtful as to their exact nature.

I was not aware until I made my first communication that Mr. Simon had noticed these bodies in 1852, in a lecture delivered at St. Thomas's Hospital (*Lancet*, 1852).

It will be seen from the foregoing account that, as in the sheep, the term "false tubercle" is very inapplicable.

Dr. Crisp, *5th May*, 1868.

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8. *Specimens and drawings, showing the origin of tubercle in the lower animals and the microscopic appearance of the blood in some examples.*

A large number of drawings and preparations were exhibited for the purpose of refuting the assertion recently made by M. Villemin, in his work, *Études sur la Tuberculose; Preuves Rationelles, Expérimentales de sa Specificité et de son Inoculabilité*, "that, with the exception of man, the monkey, the cow, the rabbit, and a few other rodents, no other animals can become tuberculous" (p. 484). Dr. Crisp said that he had examined more than one hundred different species of animals in confinement (mammals, birds, and reptiles) that were affected with tubercle either in the lungs, liver, spleen, mesenteric glands, or intestines, and he had drawings and preparations exhibiting the disease in the animals mentioned.

Drawings and microscopic preparations were also placed before the Society showing the condition of the blood in the lower animals where the tubercular deposit to a large extent affected the functions of the important viscera, such as the lungs and liver. The blood-corpuscles, as shown by the drawings, were generally lax and yielding, in birds and reptiles the nuclei were more faintly marked, and the corpuscles less uniform in size. The blood, moreover, when spread on glass could not be preserved for microscopic purposes like healthy blood. In many examples free nuclei, cholesterine-plates, and fatty matter were also present. Dr. Crisp, *19th May*, 1868.

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9. *Intestines in spirits and wax casts from the so-called typhoid fever of pigs.*

This disease has been known in this country, for many years, under the name of "soldier," and in some districts has been very fatal. Dr. Budd, of Bristol, in June, 1865, read a paper upon the disease at the Royal Agricultural Society, June 1865 (see *Journal*, p. 472), and came to the conclusion that "this affection was the exact counterpart of typhoid fever in man."

I have had an opportunity of studying this disease in living pigs and of making examinations after death, many of my agricultural friends having sustained great losses from this curious malady. During my researches on cattle-plague, I saw several pigs affected with this fever, that were supposed to have been labouring under cattle-murrain. I believe that M. Bouley, one of the professors of Alfort, mistook this disease, which he witnessed in two peccaries at the Paris Gardens, for cattle-plague: he calls it a confluent eruption in the intestines, like small-pox. In my work on the cattle-plague, 1866, I was the first to show that the disease bore little or no resemblance to typhoid fever in man; my words are these, p. 114:—

"*Letter* 13.—I am sorry to differ again from Dr. Budd. The ulcerations do not resemble those in typhoid fever; indeed, they present a very different aspect, for in some cases the whole tract of the alimentary canal is covered with rupia-like elevations of a rounded form, many of them isolated, and not affecting specially the aggregate glands; the appearance is more like that of small-pox than any thing seen in cattle-plague; and I am not surprised that M. Bouley should speak of it in the peccary as a confluent eruption like small-pox," &c.

It differs materially from typhoid fever in the human subject in being highly contagious; so that I have met with an instance where pigs that were carried in a waggon, after others had been in the vehicle a month before, took the disease. It is much more fatal, too, than typhoid fever in man. I have known seventy pigs all killed by it in a short time. It resembles typhoid fever in the human subject in attacking more frequently the young, and it occurs irrespectively of food and condition. I need not describe the morbid appearances, as they have been fully given by Dr. Budd and others and the specimens on the table show its characters—first, inflammatory action in the mucous membrane of the intestinal tube, and then exuberant cell growth forming rupia-like prominences with depressed centres, &c.

Dr. Murchison, May 7th, 1867, as seen in the *Transactions*,* was not acquainted with my previous observations respecting the non-identity of this affection with typhoid fever. I refer those who are interested in this disease to his paper, *Transactions*, 1867, p. 295, and to that of Dr. Budd, before quoted. Much has yet to be learnt respecting the nature of this disease, especially in its early stages. As stated in my work before cited, it bears a greater resemblance to small-pox than the eruption of cattle-plague (when this eruption is present); and it is, I think, possible that, in a thick-skinned animal like the pig, where the eruption could not appear on the surface, this may be a kind of modified internal small-pox.

Dr. Crisp, 19*th May*, 1868.

* Dr. Murchison's observations were made in November, 1865, and February, 1866. See *Transactions*, vol. xviii., p. 296.—Ed.

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